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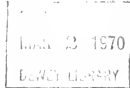
INTERNATIONAL MIXED VENTURES IN NORWAY

by

Arthur Stonehill
Oregon State University

August, 1969

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A country study constituting part of the international mixed venture research project directed by Richard D. Robinson, Massachusetts Institute of Technology, Sloan School

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I - OFFICIAL NORWEGIAN POLICY TOWARD DIRECT FOREIGN INVESTMENT	
- Early Policy	1
- The Concession Act of December 14, 1917	2
- Pre-war Policy (1920-1939)	4
- Post-war Policy (1945-1966)	5
- Foreign Share of Norwegian Enterprises	7
II - GOVERNMENT-OWNED INDUSTRIAL ENTERPRISES IN NORWAY	
- Historical Development	9
- Legal Organization	10
- Decision-Making Bodies	12
III- THE NORWEGIAN ALUMINUM INDUSTRY	
- Pre-World War II	19
- Post-World War II	23
IV - CASE STUDY OF ARDAL OG SUNNDAL VERK	
- Historical Background	28
- The Alcan Partnership	35
- Developments Since the Alcan Partnership	44
- Organizational Structure	48
- Auditing	60
- Labor Relations	62
- Planning and Control	65
- Conclusion	68
V - CASE STUDY OF A/S ALNOR ALUMINUM NORWAY (ALNOR)	
- Historical Development	70
- Organizational Structure	75
- Auditing	82
- Labor Relations	82
- Planning and Control	84
- Conclusion	84
Footnotes	86

- List of Exhibits -

	Page
1 - The Relative Foreign Share of Selected Economic Variables in 1961	8
2 - Industry Department	16
3 - Structural Relationships of Norwegian Aluminum Industry	21
4 - Economic Data on the Norwegian Aluminum Industry and Total Manufacturing During 1966	27
5 - Ardal og Sunndal Verk December 31, 1966 Balance Sheet	34
6 - Consolidated ASV Balance Sheet as of December 31, 1968	46
7 - ASV and Subsidiaries	52
8 - Board of Directors of ASV	53
9 - The Stockholders' Committee of ASV as of January 1968	54
10 - Organization of ASV Headquarters in Oslo	56
11 - Organization Chart for Ardal Verk	58
12 - Organization Chart for Nordisk	61
13 - Economic Data for Norsk Hydro Based on Fiscal Year 1965-1966 (July)	76
14 - Organization Chart for Alnor	78
15 - Norsk Hydro Organization Chart on January 3, 1968	81

OFFICIAL NORWEGIAN POLICY TOWARD DIRECT FOREIGN INVESTMENT

Early Policy¹

Whereas there has been near unanimity of opinion through the years as to the desirability of foreign loan capital, direct foreign investment in Norway has been more controversial. Toward the end of the 1830's, an influx of direct foreign investment in industries based on natural resources alarmed many Norwegians, who feared uncontrolled exploitation of the best resources. This fear was made articulate by Parliament, which passed a series of concession laws and regulations designed to control foreign rights to own property, forests, mines and waterfalls.

Although the concession laws provided a partial institutional framework for direct foreign investment as early as 1888, those laws which had the most lasting importance were passed from 1909 to 1920. The law of 1909 made it impossible for foreigners to own forests. The laws of 1913, 1914 and 1915 regulated the right to own mountain and meadow land, as well as limestone deposits. The laws of 1920 and 1949 regulated the ownership of agricultural land and quartz deposits. The most important law for industrial and trade establishments was passed December 14, 1917 and amended several times since. The most recent major amendment was by the act dated June 19, 1969.

In general, the concession laws were flexible enough to allow a wide variance in interpretation, depending on the Government in power and popular feeling. Prior to the law of 1917, foreign investment was discouraged from

undertaking certain types of activities, but there was certainly no overall constraint in practice. Even after 1917, it is difficult to say if the war-time repatriations and decline in the number of new foreign investments were a result of the concession laws, or just a general disenchantment with profit possibilities in Norway.

The Concession Act of December 14, 1917

In accordance with the Concession Act of 1917,² certain Norwegian-registered companies are obliged to seek a concession if they wish to rent or own real estate. Companies so restricted are those in which the capital stock is more than 20% in foreign hands or in which all the members of the local board of directors are not Norwegians domiciled in Norway. This entails an ad hoc agreement between the investor and the Norwegian Government.³ Individual foreigners may own property of all kinds, generally under the same provisions of the concession laws as apply to foreign corporations. Rental of real estate not involving mines and waterfalls, and not related to an industrial enterprise, ordinarily does not, however, require a concession agreement. A trading company, for example, is not required to obtain a concession agreement.

The Industry Department has the responsibility for administering the Concession Act of December 14, 1917. In some cases, the approval of Parliament is also required. The Act, itself, contains detailed regulations regarding its application and, in some instances, precise regulations regarding the rights and obligations which may be provided in an agreement.

There are some mandatory requirements under the 1917 act, particularly in the case of waterfalls and mining concessions.⁴ In addition to stipulations

which have been required in one or another concession, the mandatory conditions are that:

- (1) The corporation's seat be in Norway.
- (2) A majority of the board of directors be Norwegian citizens.
- (3) A certain part of the capital stock be in the hands of Norwegians.
- (4) Norwegian capital has equal opportunity to share in any extension of a corporation's share capital.
- (5) Fringe benefits be granted to employees, including, if in isolated areas, adequate housing, commissary facilities, and schools.
- (6) Any damage to roads, quays, or other public property be repaired.
- (7) In the case of use of waterfalls, a certain concession fee to be paid to the Norwegian Government and to the local communities.
- (8) The property not be sold or transferred without permission.
- (9) Preference be given to Norwegian labor and materials.

A foreign corporation wishing to engage in trade or other business activities in Norway may also do so through a registered branch office of the corporation. The branch office must be registered in the Commercial Register. Ordinarily, the branch office must have its own board of directors (separate from the parent company), and the members of the board must be residents of Norway. If the branch office is solely engaged in production, or partly in production and partly in trade, dispensation may be given from the above-mentioned rule so that one or more members of the board may be residents of foreign countries. Dispensation is given upon application to the Commerce Department. If the branch is solely engaged in trade, no such dispensation is given. The parent company is responsible with all its capital for liabilities contracted by the Norwegian branch office. It is not possible under Norwegian law for any kind of foreign business organization other than a corporation to register a branch office.

The advantage of a corporation over a branch is that the foreign investor is not legally considered the parent corporation, and, therefore, is not

liable with all its capital for liabilities contracted by the Norwegian corporation.

A trading license must be obtained from the police in order to engage in one or more of the following businesses: (1) Trade in goods, wholesale, retail, or on a commission basis (with some exceptions); (2) agency business, excepting insurance agencies; (3) banking business, excluding savings banks, banks established by law, and banks which come under the Joint-Stock Bank Act; (4) book publishing; (5) dealing in securities; and (6) consumer and producer marketing corporatives, with some exceptions.

Pre-War Policy, 1920-1939⁵

During the interwar period, the various Norwegian Governments interpreted the existing concession laws in such a manner that foreign takeovers of Norwegian corporations were not considered contrary to the public interest. Such a permissive attitude was necessarily motivated by a desire to counteract production and employment instability in economic sectors connected with external trade. The instability was partially caused by fluctuations in the terms of trade, as well as the trend toward international cartels and other artificial barriers to trade. It was felt that direct foreign investment and participation in the cartels would help to solve the immediate financial problem, and offset the disadvantages of Norway's small size when forced to compete against cartels.⁵

In 1927, Parliament passed the so-called "10% Rule", which was designed to encourage domestic production of certain categories of imports, particularly electrotechnical products and machinery. In the Concession Act of 1917, preference was to be given to Norwegian production for deliveries to projects connected with waterfalls or mines. The 10% Rule gave substance to this

provision by requiring that 10% be added to foreign bids before choosing between foreign and domestic suppliers. In addition, there was already a protective tariff on some of the same categories of imports. In practice, some import substitution was achieved; however, in the case of electrotechnical products, increased Norwegian production was achieved partly by foreign companies purchasing or establishing subsidiaries in Norway to produce on license those items that were formerly imported.

Post-War Policy, 1945-1968⁶

In accordance with the policy of favoring a high rate of investment during the post-World War II period, the Norwegian Government showed a genuine, but politically qualified, interest in direct foreign investments. In 1959, a commission was established to coordinate information and contact activity in connection with increasing foreign interest in manufacturing and trading investments in Norway.⁷ Norway's location within the EFTA market, a favorable rate of growth in the domestic market, liberalization of exchange and import regulations, and the availability of low cost hydroelectric power were the main factors attracting direct foreign investments, especially after 1958.

The Government's viewpoint has been restated a number of times since 1959. The Long Term Program of 1962-1965 declared that the Government wished to encourage direct investments where Norway does not have the possibility to build its own independent production. Investments that contribute new production methods and techniques, or give access to research results, export markets, sources of raw materials, or semimanufactures are particularly desirable.⁸

In Stortingsmelding nr. 8 (1962-63), the policy of encouragement was reaffirmed in relation to the expansion of electrical power production and electrical power-using industries. It was argued that the heavy import and fixed asset requirements for these sectors made it desirable to have foreign financial participation. Furthermore, since the electrical power-using industries are often dependent on export markets which are dominated by a few worldwide concerns, it was felt that it would be an advantage to have their participation. This would improve the chances for stable access to raw materials and export markets at reasonable prices. It was stated that the most desirable type of participation would be on a loan basis for electrical power production, and a partnership basis for the electrical power-using industries. In the latter case, the highest possible degree of processing should be carried out in Norway.⁹

Finally, in Stortingsmelding nr. 21 (1963-64), The Department of Industry indicated the specific factors that are taken into consideration in evaluating an application for a concession.¹⁰ These factors are as follows:

1. Income, employment and production effects
2. Location of the project with regard to regional planning goals
3. Degree of foreign financing of the project, and to what extent it will burden the domestic capital market
4. Possibility of establishing new types of production activities
5. Possibility of receiving new technical, marketing, and research know-how
6. Desirability of cooperating with international concerns to secure better and more stable prices, as well as guaranteed access to raw materials and export markets
7. Degree to which the domestic sector is already developed and its raw material sources fully utilized
8. Degree of competition on the home market with already established Norwegian companies and the danger of monopoly practices

Foreign Share of Norwegian Enterprises

Foreign ownership of Norwegian enterprises is concentrated in the manufacturing and mining industries and to a lesser extent in the import industry. Exhibit 1 shows the foreign relative share of the Norwegian manufacturing and mining industries in 1961. It should be noted that although the Norwegian enterprises with 50% or more foreign ownership accounted for only 5.2% of employment in manufacturing and mining, they earned 23.4% of net income in these industries.

By the end of 1966 Norwegian enterprises with 50% or more foreign ownership had increased their share of employment from 5.2% to 6.2% and their share of value added from 6.5% to 8.4%.¹¹

A recent study tried to measure the effect of foreign-owned enterprises on the Norwegian economic goals of rapid growth, stable high employment, fair distribution of income, development of regions with weak economic foundations, and a tolerable balance of payments deficit.¹² Using the period 1952-1962 it appears that the foreign-owned enterprises had at least as favorable an impact on these goals as comparable Norwegian-owned enterprises in the same industry groups. Typically, the foreign-owned enterprises were larger, more capital intensive, and more profitable.

Exhibit I

THE RELATIVE FOREIGN SHARE OF SELECTED ECONOMIC VALUABLES
IN 1961
Per cent of Total Norwegian By Industry Group and Category of Ownership

Industry group	Em- ploy- ment	Gross pro- duc- tion value	Value added (fac- tor prices)	Wages and salar- ies	Oper- ating in- come	As- sessed in- come	Di- rect taxes	Net in- come	As- sessed net worth	Capita- l stock (face value)
Norwegian companies or more foreign- owned										
Mining	10.9	11.9	11.9	10.7	13.0	4.8	4.2	5.9	1.6	12.5
Manufacturing ...	5.1	8.4	6.4	6.2	6.6	21.9	20.5	24.0	13.1	---
a) chemical and oil	10.1	16.8	12.2	10.5	13.2	15.9	14.4	18.0	8.7	---
b) basic metals....	23.6	37.5	22.0	24.6	20.1	44.6	43.4	46.2	34.2	---
c) electrotechnical	42.9	42.5	43.5	45.7	40.7	78.5	77.8	79.3	69.9	---
d) other.....	1.2	1.3	1.2	1.4	1.0	1.9	1.8	2.0	1.8	---
al mining and manu- facturing	5.2	8.5	6.5	6.5	6.5	21.3	19.9	23.4	12.5	12.5
Norwegian companies 49% foreign-owned										
Mining	10.0	8.7	9.5	10.4	8.3	12.8	11.1	15.8	21.0	17.2
Manufacturing....	3.2	4.2	5.4	5.7	7.2	12.4	12.6	12.1	14.9	---
a) chemical and oil	32.1	23.8	32.9	32.8	33.0	53.2	55.1	55.5	62.3	---
b) basic metals....	9.8	10.9	15.1	9.5	19.2	5.6	5.8	5.4	6.7	---
c) electrotechnical	---	---	---	---	---	---	---	---	---	---
d) other.....	0.5	0.7	0.6	0.6	0.5	0.1	0.2	0.1	0.2	---
al mining and manu- facturing	3.4	4.3	5.6	5.9	7.3	12.4	12.5	12.3	15.2	17.2
Combined A and B										
Mining	20.9	20.6	21.2	21.1	21.3	17.6	15.3	21.7	22.6	29.7
Manufacturing....	8.3	12.6	11.8	9.9	13.8	34.3	33.1	36.1	28.0	---
a) chemical and oil	42.2	40.6	45.1	43.5	46.2	71.1	69.5	75.5	71.0	---
b) basic metals ...	33.4	48.4	37.1	34.1	39.3	50.2	49.2	51.6	40.9	---
c) electrotechnical	42.9	42.5	43.5	45.7	40.7	78.5	77.8	79.3	69.9	---
d) other.....	1.7	2.0	1.8	2.0	1.5	2.0	2.0	2.1	2.0	---
al mining and manu- facturing	8.6	12.8	12.1	10.2	14.1	33.7	32.4	35.7	27.7	29.7

Source: Arthur Stonehill, Foreign Ownership in Norwegian Enterprises
(Oslo: Central Bureau of Statistics, 1965), p.125

II

GOVERNMENT-OWNED INDUSTRIAL ENTERPRISES IN NORWAY

Historical Development

Although the Labor Party (Arbeiderparti) was in power during the period 1935-1965 there was no concerted effort made to nationalize Norway's main industries. Nevertheless, partly by historical accident the Government has inherited or started a number of industrial enterprises and owns significant capital stock in others. In addition, the Government owns most of the public utilities and several special purpose industrial enterprises. During 1966 the Government-controlled (more than 50% ownership) enterprises in the manufacturing and mining industries accounted for 5.9% of employment, 7.3% of wages and salaries, 6.2% of value added, and 6.4% of gross capital formation within those industries.¹³ This is about the same share as Norwegian enterprises with 50% or more foreign ownership.

For purposes of analysis, the Government industrial enterprises can be divided into four groups.¹⁴ Group 1 consists of corporations with mixed public and private ownership. In some of these enterprises the Government inherited its share from takeovers of German-held capital stock in Norwegian corporations as World War II reparations. Included in this package was part of its 48% interest in Norsk Hydro (Norway's second largest industrial enterprise -- see case studies), majority control of A/S Sydvaranger (the largest iron mining company), and minority interests in a number of electrotechnical companies. During the war the Norwegian Government-in-exile also repatriated a minority interest

in A/S Union (one of the largest paper companies) from Hambros Bank in London.

Group 2 consists of 100% Government-owned industrial corporations. Most of these stem from the Government's desire to stimulate development of Norwegian natural resources, particularly in areas with a weak economic basis for existence. A/S Norsk Jernverk (iron and steel), A/S Norsk Bergverk (mining), Norsk Koksverk A/S (coke), and A/S Ardal og Sunndal Verk (aluminum -- see case studies) are examples of this kind of Government enterprise.*

Group 3 consists of the military enterprises. These were started as Government munitions and armaments factories, but have expanded into production and sales of non-military items. Included in this group are Marinens Hovedverft (naval shipyard), Raufoss Ammunisjonsfabrikk (ammunition), and Kongsberg Vapenfabrikk (rifles and other armaments).

Group 4 consists of utilities or special purpose enterprises. These include some of the electrical power companies, the railroads, postal service, telephone and telegraph service, monopolies for the importation of corn, fishing equipment, and drugs, and monopolies for the sale of liquor and national lottery tickets.

Legal Organization

Before the Law of June 23, 1963, the legal organization of Government enterprises was mostly an ad hoc affair. Those enterprises in which the Government shared ownership with private investors (Group 1 above) were organized as any other private corporation, in accordance with the Act on Joint Stock Companies of July 6, 1957. The 100% Government-owned enterprises which were operating in areas dominated by private enterprise (Group 2) also were usually organized as normal private corporations. The military enterprises (Group 3)

* Ardal is properly Årdal in Norwegian (pronounced phonetically "Oardal"), but will be spelled Ardal for convenience sake in this paper.

were independent organizations but not corporations. Their budgets and obligations were part of the Government's general budget. The rest of the Government enterprises (Group 4) were organized under a variety of special laws.

Government advisory commissions were established from time to time to try to systematize the organizational form for Government enterprises. These included the Skau Committee 1948-1952, Fjeld Commission 1953-1955, Special Parliamentary Committee 1953-1955, and finally the Eckhoff Committee 1957-1960. The latter committee presented two alternative proposals for 100% Government-owned enterprises, which eventually became the basis for the Law of June 25, 1965.¹⁵

Under the Law of June 25, 1965, all 100% Government-owned industrial enterprises will eventually be organized as corporations under one of two plans.¹⁶ Enterprises which are supposed to be run on a profit-making basis and are competing with private enterprises will be organized as ordinary private corporations. This would include all of the enterprises in Groups 1, 2, and 3, including the two which have relevance for the aluminum industry (A/S Ardal og Sunndal Verk and Norsk Hydro). Most of the enterprises in Group 4 will also be organized as corporations, but under a special law (saerlov) which defines public corporations. The special law is really a simplified version of the Act on Joint Stock Companies of July 6, 1957 and therefore does not essentially differentiate public from private corporations to any great extent.

The theory behind the new law is to give the Government enterprises a maximum of decision making freedom in order to promote efficiency, while seeking to insure that the Government's constitutional responsibility to

protect and supervise public property is not compromised.

There are a number of practical advantages to having the Government enterprises organized as corporations:

1) Financing is simplified because a corporation can borrow in its own name on the open market and mortgage its assets, whereas previously, financing frequently came from the Government general budget or Government guaranteed loans.

2) Management is aided by the fact that the customers understand the corporate form of organization better than former hybrid forms.

3) The obligatory annual stockholders meeting gives the appropriate department minister a formal chance to review the entire business, rather than relying entirely on informal reviews and contacts with the president or individual members of the board of directors.

Implementation of the Law of June 25, 1965 has not yet been completed. Nearly all of the enterprises in Groups 1 and 2 were already organized as private corporations so that no change was needed. In this connection, a few changes in the Act on Joint Stock Companies of July 6, 1957 were made in order to make its wording appropriate for Government-owned enterprises. The military enterprises (Group 3) were reorganized as private corporations around the turn of the year 1968-69.¹⁷

Decision-Making Bodies

Those Government enterprises organized as private corporations have the same principal decision making bodies as the other private corporations, i.e., board of directors (styre), stockholders' committee (representantskap), president (administrerende direktør) and annual stockholders' meeting (general forsamling).

In Norwegian corporations the board of directors usually has the final responsibility for important operating decisions even though it may delegate some of its authority to the president. The Government exercises its power to control Government enterprises mainly through its right to select members of the board of directors in proportion to its stock ownership. This is accomplished in practice at the annual stockholders' meeting by the appropriate departmental minister (e.g., Industry Department in the case of the aluminum companies) or his representative. Selection is based in all essentials on competence and experience rather than representation of special interest groups or Government departments. One of the few exceptions from private corporate practice is that 100% Government-owned corporations must have at least one employee representative on the board of directors. Even this requirement can be waived if impractical because of the size or purpose of the enterprise. After some controversial experience, government civil servants from the department which elects board members are not eligible for board membership.

In contrast to many American corporations, Norwegian board members are usually selected from outside the enterprise and often outside the industry. It is unusual to find a majority of the board with technical knowledge of the industry.

Corporate law in Norway (and Finland) permits, but does not require the establishment of an unusual body called the "representantskap" or "rad." This is a committee selected by the stockholders to see that the board carries on the corporate business in accordance with the articles of incorporation (vedtekter) and to act as a forum for the various special interest groups. The committee members need not be stockholders themselves. The stockholders'

committee has been used in some of the shipping companies and Government-owned enterprises but not typically in most other industrial enterprises. In 100% Government-owned enterprises, where there is only the department minister at the annual stockholders meeting, it has been considered useful to have a stockholders' committee composed of representatives of the employees, industry, local community, the Government, and persons with particular professional competence. Under the Law of June 25, 1965, one-third of the stockholders' committee in 100% Government-owned enterprises must be elected by the employees. In some cases the articles of incorporation may require that certain specified decision making functions have the approval of both the stockholders' committee and the board of directors.

The president is elected by the board of directors, normally after consultation with the Government, and may be elected a member of the board (ex-officio). He is responsible to the board but usually has a good deal of delegated authority. The "outside" composition of the board usually makes it less interested in details than in policy guidelines.

The constitutional responsibility for Government enterprise rests with the department minister who votes the Government's stock at the annual stockholders' meeting. Under the Law of June 25, 1965, the board of directors, president, and stockholders' committee must attend the annual stockholders' meeting so that an exchange of opinions may take place. Dissent on decisions made at this meeting can be made in writing. The board of directors is expected to keep the department minister informed on developments as they occur between stockholders' meetings.

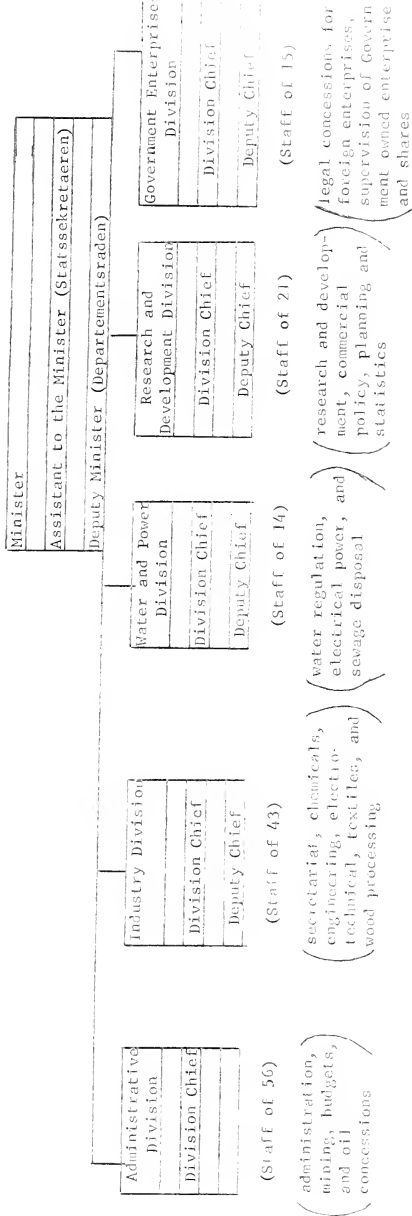
The Minister of Industry is responsible for the Government's interests in the aluminum industry. During the early 1960's there was considerable debate and controversy over just how this responsibility should be implemented.¹⁸ In 1965, the Labor Government proposed a reorganization of the Industry Department, which was carried out after the coalition Government came to power.¹⁹ The current organization of the Industry Department is shown in Exhibit 2.

Government interests in the aluminum industry would normally be supervised by the "Government Enterprises Division." It is obvious that with a staff of 15 there is not much chance for detailed supervision or interference. Field interviews also gave the impression that it was contrary to the Industry Department's policy to interfere directly in daily operations, nor does it "instruct" its representatives on the boards of directors. In fact, some of the business and professional leaders who were interviewed expressed the feeling that the Industry Department has shown such great restraint in exercising the Government's ownership interest that it has actually abdicated the decision-making authority to the professional management of the Government enterprises, in about the same manner as the spread of stock ownership in the large modern corporation leads to control by its professional management.

Two examples of this restraint are worth reporting because they have a bearing on developments in the aluminum industry. Although the Government held controlling interest in Norsk Hydro (48%) and A/S Ardal og Sunndal Verk (100%), it never forced the two into any kind of partnership. Norsk Hydro (fertilizers, plastics, and magnesium) was long interested in producing aluminum and owned both electrical power and possible aluminum sites. Some observers thought that it should have entered a joint venture in aluminum with A/S Ardal og Sunndal Verk (aluminum).

Exhibit 2

INDUSTRY DEPARTMENT



Source: Organization chart given to the interviewer by the Division Chief, Government Enterprises Division, Industry Department, 1968.

The main objection from A/S Ardal og Sunndal Verk's viewpoint was that Norsk Hydro did not control bauxite sources or aluminum fabricators and had no technical experience in aluminum. These were the main contributions that were desired from a potential partner.

Another example of Government restraint is in the granting of electric power concessions. These are processed by the "Water and Power Division" of the Industry Department (Exhibit 2). No preference is given to Government enterprises. All industrial power users pay the same price for Government delivered electricity (1.8 øre/KWH - or \$.0025 - plus 17% for the cost of transferring power to the site)* A major Parliamentary debate on June 14, 1965, on the granting of power concessions to Elektrokemisk A/S and A/S Ardal og Sunndal Verk generated no speeches in favor of giving preference to the Government-owned corporation.²⁰

From time to time the Government has been forced to drop its non-interference policy because one or another Government enterprise faced financial difficulties. Such enterprises have required additional Government investment in the form both of loans and capital stock. Since Parliamentary approval was required, the operation of these enterprises was both defended and attacked in Parliament and the Norwegian Press. In summary, the Industry Department and Parliament follow a policy of non-interference unless the Government enterprises start losing too much money.

Under the law of June 25, 1965, all of the 100% Government-owned enterprises organized as corporations have both private and Government audits. The private audit is conducted by private accounting firms in the same way as

* Exchange rate is 7.14 Kroner per dollar. The Krone is subdivided into 100 øre.

for any other company. The Government audit is conducted by the Government's own auditing department. (Riksrevisjon). The latter is much less detailed than the private audit and is concerned mainly with the manner in which the department minister has carried out his constitutional responsibilities with respect to the enterprises he supervises. The enterprises which are not 100% Government-owned do not normally have a Government audit.

III

THE NORWEGIAN ALUMINUM INDUSTRY

Pre-World War II

The first aluminum production in Norway began at Stangfjorden in Sunnfjord on January 8, 1908.²¹ A/S Stangfjorden Elektrokemiske Fabriker, founded in 1897 by Norwegian capital for the production of fuel, had failed financially. British Aluminum Company (BACO), hearing of the unused electrical power plant, invested kr.370,000 in 1906 to build a smelter and buy the power concession. Although the new enterprise had 40 smelter ovens, they were never all in use because the water supply was not adequate for continuous electrical production. Output approached 700 tons per year at times prior to World War II.

The second aluminum operation in Norway was A/S Vigelands Brug, which firm was organized in 1900 by an English businessman, I. C. Hawkshaw. In 1896 he had bought a large estate located at Vikeland, near Kristiansand, Norway.²² The estate had a varied business of milling (flour and lumber) and electrical power production. After trying unsuccessfully to sell his surplus power to the town of Kristiansand, he decided to increase the electrical power capacity and build an aluminum plant. This was accomplished during 1907-1908, and toward the end of 1908 aluminum production began. Typical of the early aluminum ventures, the enterprise was quite international. The plant was planned by a Norwegian engineer, purchased its equipment from Switzerland, and imported alumina from Giulini, a German producer. Its name

on the international market was the Anglo-Norwegian Aluminum Company. Right from the start there were financial problems and in 1912 BACO bought most of the capital stock (kr. 2 million). Just prior to World War II, capacity was 3,500 tons of aluminum with employment, 270 persons.

Det Norske Nitridaktieselskap (DNX) was founded in 1912 by Sam Eyde, the great Norwegian industrial pioneer, and a consortium of French companies led by the aluminum producer Pechiney.²³ The original object was to produce aluminum nitrate by the untested Serpek process. When this failed to be feasible economically, production of aluminum was started. During World War I a smelter of 5,500 tons capacity was built at Eydehavn near Arendal and another one of the same size at Tyssedal on Hardangerfjord. Pechiney continued to own a majority of the stock until 1923 when Alcoa (Alcan in 1928) and BACO each bought one-third interests. Pre-World War II capacity reached 14,000 tons.

In contrast to the other pre-World War II Norwegian aluminum companies, A/S Norsk Aluminium Company (NACO, originally called A/S Høyangfaldene) was founded in 1915 solely by Norwegian initiative.²⁴ The original capital stock of kr. 10 million was subscribed by public issue. The prime movers were businessmen with interests in the electric power company, A/S Høyangfaldene, which was to serve the aluminum plant at Høyanger. Sigurd Kloumann, another Norwegian industrial pioneer, served as the first president and continued as such until 1945. The original capacity of the plant was 7,000 tons of ingot.

In 1917, NACO founded A/S Nordisk Aluminiumindustri (Nordisk) in Holmestrand as Norway's first and only significant pre-World War II aluminum fabricator. The enterprise grew steadily even during the unstable

1920's and 1930's until just before World War II when it was producing 2,000 tons of rolled semi-manufactures and 350 tons of finished goods, using ingots from NACO. Employment in Nordisk was over 300.

NACO also tried to gain its own alumina capability by purchasing bauxite development rights in Surinam and attempting to build an alumina plant in France. The latter was completed at a cost of kr. 12 million, but turned out to be such a high cost plant that subsequently it was closed down. This event placed NACO in a liquidity crisis in 1923, which resulted in Alcoa's buying 50% of the shares in NACO and Nordisk and taking over NACO's bauxite rights. A few years later, NACO again tried to produce its own alumina, this time with a Norwegian plant at Høyanger which used a Norwegian process discovered by Professor **Harald** Pedersen. The plant began operation in 1928 with a capacity of 14,000 tons of alumina, just enough to supply NACO's needs at that time. Because the process is power intensive, no other alumina plants have been built using the Pedersen process.

One more Norwegian aluminum company was started prior to World War II, A/S Haugvik Smelteverk in Glomfjord, which was founded in 1926 by the international Aluminum Corporation, Ltd., (a small British alumina producer and fabricator) and Giulini (a German alumina producer).²⁵ Capacity was 12,000 tons but output never exceeded 7,500 tons. Average annual production was closer to 3,600 tons until World War II. In 1932, NACO purchased a majority interest and the shares were resold to the members of the international aluminum cartel (BACO, Alcan, Pechiney, VAW, and AIAC), with BACO as operator.

Just prior to World War II, Norway had a combined aluminum production capacity of 37,200 tons distributed as follows: Stangfjorden, 700; Vigeland's Brug, 3,500; DNX, 14,000; NACO, 7,000; and Haugvik, 12,000.²⁶

The industry was still in its infancy in Norway as it was in the rest of the world.

Post-World War II

The establishment of four large new companies since World War II (see case studies), plus growth in the surviving pre-war companies, has made aluminum one of the most dynamic post-war growth industries in Norway.

A/S Ardal og Sunndal Verk (ASV) was founded in 1947 as a Government-owned corporation to complete the aluminum plant the Germans had started at Ardal during the war. Original plans called for a 24,000-ton capacity but two expansions had increased capacity by 1968 to 115,000 tons. A second plant was built at Sunndalsøra and began production in 1954 with an original capacity of 40,000 tons. Through successive additions, this plant had increased its capacity to about 120,000 tons by the end of 1968. ASV thus became the largest non-integrated aluminum producer in the Western world and the fourth largest (measured by sales) manufacturing corporation in Norway. During 1966 an agreement was reached with Alcan for the latter to become a 50-50 partner with the Norwegian Government in ASV through an exchange of shares and \$4 million in cash. In so doing, Alcan transferred its 50% share of NACO and Nordisk to ASV. The Government bought the other 50% share from A/S Høyanger and transferred it to ASV.²⁷

Mosjøen Aluminium (MOSAL) was founded in 1956 by the Norwegian firm Elektrokemisk A/S, with one-third of the capital supplied by the

integrated Swiss producer, AIAG (Alusuisse). Production began in 1958 at Mosjøen with a capacity of 22,000 tons. The plant had been expanded to 37,000 tons by the end of 1968. The Swiss share was purchased by Elektrokemisk A/S in 1963. On January 1, 1964, Alcoa purchased one-half interest in the Mosjøen plant and continued as a partner with Elektrokemisk A/S.

Sør-Norge Aluminium A/S was founded in 1962 by a Swiss-French consortium composed of AIAG and the French-Swiss finance group Compadec. The original plan was to sell a 50% interest in the corporation through a public issue to private Norwegian investors. The public offering was very controversial and ended up a failure. Eventually, 20% of the stock was purchased by private Norwegians. The plant at Husnes began operation in 1966 with a capacity of 60,000 tons.

The last of the big post-war projects was Alnor Aluminium Norway A/S, founded in 1963 by a partnership of Norsk Hydro (the second largest Norwegian manufacturing company) and Harvey Aluminum of the United States. Norsk Hydro holds 51% of the capital stock and Harvey Aluminum, 49%. The firm began production at Havik, Karmøy, in 1967 with a capacity of 30,000 tons. Semi-manufactures will soon be produced by a rolling mill (capacity 24,000 tons) and two extrusion presses (capacity 12,000 tons). This project will more than double Norway's aluminum fabricating capability.

Only three of the five pre-war aluminum producers survived. A/S Stangfjorden Elektrokemiske Fabriker was never reopened after the War, and its assets were sold to Norges Fiskerilag in 1949. A/S Haugvik Smelteverk was sabotaged during the War and never began production again. It was liquidated in 1947, and its assets at Glomfjord sold to Norsk Hydro for

conversion to an ammonia factory. A/S Vigelands Brug converted its plant into a refining operation in which ordinary grade aluminum (99.5%AL) is converted into super purity aluminum (99.99% AL). Capacity is 2,800 tons, all of which is exported to BACO and sold through the latter's sales organization. Since the War, NACO had quadrupled its aluminum capacity to 28,000 tons and its alumina capacity to 18,000 tons, while Nordisk had expanded its fabricating capacity to about 28,000 tons. As mentioned above, both were merged into ASV in 1967. DNN continues as a joint venture between Alcan and BACO, Pechiney being bought out in 1958. Capacity has been more than doubled to about 33,000 tons. Exhibit 3 presents a diagram summarizing the historical development of the Norwegian aluminum industry.

Future plans for the Norwegian aluminum industry include a second 50-50 joint venture between Elektrokemisk A/S and Alcoa to be built at Lista with a probable ingot capacity of 30,000 tons. ASV is in the process of rebuilding its first Ardal plant and will gain an additional 53,000 tons of capacity in the process.

Almost all of the other producers are considering expansion plans, but a lot depends on developments in the foreign commercial policy area. Results of the Kennedy Round in G.A.T.T. were a disappointment. The EEC tariff on ingots was and is still 9% (excluding a low tariff quota of 130,000 tons which enters the EEC at 5%). Most of Norway's aluminum has come in under the quota, but the quota imposes a limit on expansion. The current EEC tariff on aluminum semi-manufactures varies between 15-19%. The Kennedy Round reduction is only to 12% over a 5 year period. EFTA no longer imposes tariffs on internal trade, but the U.K. has just given permission for three new aluminum plants to be constructed in the U.K. This will increase British capacity from 38,000 tons to 260,000 tons.²⁸

Norway was particularly upset over this development because the British Government partially subsidized these plants through low cost power contracts and investment write-off benefits. The Norwegian Government has raised its tariff from 6% to 9% on imported aluminum semi-manufactures, but the Norwegian home market is still too small to encourage expansion without export possibilities.

It remains too early to measure any differential impact of various types of joint ventures within the aluminum industry on the whole array of Norwegian national goals. However, the aluminum industry generally, which is now composed of the six joint ventures, has had a favorable impact on national economic goals since World War II, and promises to be even more important in the next decade when benefits from recent expansions are realized. Exhibit 4 provides some relevant economic data from 1966. It shows that although the aluminum industry as a whole employed only 1.4% of the total employed in manufacturing, it created 2.4% of the value added and paid 15.1% of all direct taxes (income and property) in manufacturing. The aluminum industry also accounted for 13.2% of the net worth in manufacturing, an indication of relative capital intensity in a country which has had a severe labor shortage since the end of World War II. Over 90% of all Norway's aluminum production has been exported. In short, the aluminum industry has used Norway's scarce factor input, labor, in a way which has had a relatively favorable impact on GNP (value added), the national tax base, and the balance of payments.²⁹

Exhibit -

ECONOMIC DATA ON THE NORWEGIAN ALUMINUM INDUSTRY
AND TOTAL MANUFACTURING DURING 1966

<u>Item</u>	<u>-1- Aluminum Industry</u>	<u>-2- Total Manufacturing</u>	<u>-3- Column (1) as percent of (2)</u>
1. Gross sales value (kr. 1 million) *	1,072	36,691	2.9%
2. Value added at market prices (kr. 1 million)	418	14,972	2.8%
3. Operating income before depreciation and income taxes (kr. 1 million)	284	7,025	4.0%
4. Taxable income (kr. million)	88	579	15.2%
5. Direct taxes paid (kr. 1 million)	54	358	15.1%
6. Net worth at assessed value (kr. 1 million)	1,066	8,199	13.2%
7. Employment (average number of persons)	5,572	375,450	1.4%

Source: Industristatistik 1966. (Oslo: Central Bureau of Statistics, 1968).
pp.15-17, 26-27.

* 7.14 Krone equal \$1.00. One million krone approximates \$140,000.

IV

CASE STUDY OF ARDAL OG SUNNDAL VERK

Historical Background

During the occupation of Norway 1940-1945 the Germans planned and began work on a large scale increase in the Norwegian light metal capacity in aluminum and magnesium. As part of the German war effort, A/S Njordag was founded in 1941 to carry out the aluminum plans. These plans called for building 600,000 KW of electric power, aluminum oxide plants with a capacity of 300,000 tons per year, and aluminum smelters with a capacity of 170,000 tons per year. The smelters were to be located at Ardal, Sunndalsøra, Osa, Eitrheim, and Glomfjord. Although approximately Kr. 1 billion had been spent on the aluminum projects by the end of the occupation period, work slowdowns, sabotage, and changed plans left an investment valued at only Kr. 100 million (May 1, 1946).³⁰ A/S Njordag was taken over by the Norwegian Government in 1945 and a caretaker management appointed.

A national debate ensued over how to use the aluminum inheritance, which consisted mainly of a partially completed power station (Tyn) capable of 77,000 KW, a wharf, and two partially completed smelter halls, all at Ardal, and a great deal of equipment and building materials located at a number of different places in Norway and Germany. The debate centered on whether the partially completed plant at Ardal should be finished despite a post-war over capacity in the world aluminum industry. And if so, under private or government management? On July 8, 1946, Parliament voted to complete the Ardal project under government ownership but under the same organizational form as any other private corporation. On January 26, 1947, the Industry

Department founded A/S Ardal Verk with the Government owning all common stock except for two shares, Norwegian law requiring at that time a minimum of three shareholders.

By February, 1948, the first smelter hall was in operation and two years later the second hall came on line. This completed the Ardal I project which was all that was planned for Ardal by the Germans. Total capacity of Ardal I was 24,000 tons of aluminum per year.

Financing of Ardal I was accomplished by transferring the Ardal assets of A/S Nordag worth kr. 60 million (\$8.4 million) to A/S Ardal Verk. The Government received in return the kr. 35 million (\$4.9 million) of capital stock of A/S Ardal Verk and a mortgage for kr. 30 million (\$4.2 million) at 2 1/2% interest, which was the market rate at the time.³¹ A kr. 25 million (\$3.5 million) mortgage from the Government-owned Industry Bank, several short term private Norwegian bank loans, and kr. 30 million (\$4.2 million) in sales of surplus materials completed the financing.³²

Planning for a new aluminum smelter at Sunndalsøra was begun in 1949 and by 1952 financing had been arranged. A kr. 170 million (\$25 million) loan at 2 1/2% was made by the United States via the Marshall Plan to the Norwegian Government to be relent to A/S Ardal og Sunndal Verk (name changed in 1951). The loan was to be repaid over 10 years by delivery of aluminum to the American strategic metals stockpile.³³ The Norwegian Government paid kr. 80 million (\$11.2 million) for new capital stock in A/S Ardal og Sunndal Verk (ASV). Total cost of Sunndal I was slightly less than kr. 250 million (\$35 million) for a capacity of 40,000 tons of aluminum per year. This was expanded in 1959 to 55,000 tons (Sunndal II). Production began in 1954. Electrical power was provided by the Government-owned Aura power plant, also located at Sunndalsøra.

An 80,000 ton expansion at Ardal in two stages was approved by Parliament in December, 1955 (Ardal II) and May, 1958 (Ardal III) with production starting in January, 1959 and November, 1961, respectively. Electricity

was supplied by an expansion of the ASV-owned power plant at Tyin and construction by ASV of a new power plant at Fortun. By 1963, ASV had a capacity of 165,000 tons and was the largest non-integrated aluminum producer in Europe.

The cost of Ardal II and III and Sunndal III projects, including the power plants, was kr. 819 million (\$115 million). Of this amount, kr. 600 million (\$84 million) was self-financed out of operating profit. The remainder was borrowed through two dollar loans totalling \$30 million from Alcan and Alcoa with repayment in aluminum ingots.

A further expansion of Sunndalsøra by 53,000 tons (Sunndal III) was to be completed in 1968. Together with other improvements this would give Sunndalsøra a capacity of close to 120,000 tons, about the same as Ardal.

Although ASV expanded horizontally (smelter capacity) at a rapid rate it chose not to become an integrated producer. The original German plans called for importation of bauxite and conversion in Norway to aluminum oxide using the Norwegian Pedersen process. Two aluminum oxide works were begun during World War II, one at Ardal and one at Saudasjøen. Neither was very far advanced at war-end. Despite a publically discussed disagreement within the ASV's Board of Directors and among industry and government leaders it was decided not to complete the aluminum oxide plants.³⁴ This decision was confirmed by overwhelming Parliamentary vote. The main reasons for this decision were that the Pedersen method was obsolete,³⁵ the planned aluminum oxide plants were too small in comparison to competing plants, the expense of an economic size aluminum oxide plant would be large at a time when investment capital was strictly rationed, and there would be a two to three year lag after the smelters were completed before the aluminum oxide plants could be ready. Those opposed to dropping the aluminum oxide plants felt that ASV would become too dependent on the large integrated concerns, which owned virtually all of the aluminum oxide plants in the world, and in addition

were the main competing aluminum producers.

As an alternative to aluminum oxide production ASV bargained with the main integrated aluminum concerns and in 1947 reached a 15-year barter agreement with Alcan, whereby the latter supplied ASV with its aluminum oxide needs and received a fixed ratio of aluminum ingots as payment. The barter agreement method has continued to be used up to the present time, new agreements being reached with Alcan in 1951, 1958 and 1965. One barter deal for aluminum was made with Alcoa in 1955 in connection with the expansion of Ardal II and an Alcoa loan to help finance the expansion. The loan and alumina were repaid in aluminum.

Transportation of alumina was also covered by long term contracts. ASV was a pioneer in developing the bulk transport of alumina, which had previously been carried in individual sacks.

Sale of about one-third of ASV's aluminum ingot production was thus guaranteed by reason of the barter agreements. For the balance of its production ASV followed a policy of supplying independent fabricators on a long term contract basis. Price concessions had to be made and some temporarily lucrative spot sales were foregone in the interest of stability.

From time to time ASV considered starting an operation to produce its own semi-manufactures but there were always too many negative factors:

1. Traditionally, the semi-manufacturing stage was market-oriented because high tariff barriers and transportation costs made exports prohibitive. The relatively small Norwegian home market was adequately served by A/S Nordisk Aluminiumindustri.³⁶

2. In the immediate post-World War II years there was considerable overcapacity in the aluminum fabricating industry. This continued during the early 1950's, even when there was a scarcity of ingots. Competition had always been much stiffer in the fabricating business than in the ingot business, and Norway's main comparative advantage, electrical power, was only important for ingot production.
3. The cost of building a competitive (i.e., large) fabricating plant had to be weighed against alternative uses of funds to expand what appeared to be the more lucrative ingot business.
4. Many of ASV's ingot customers preferred ASV because they were the largest non-integrated aluminum producer without competing fabrication plants.
5. The physical location of the two smelters at Ardal and Sunndalsøra did not favor expansion into semi-manufactures. Both locations were surrounded by mountains and had very little land to spare. All of the Ardal smelters had to be located at Øvre Ardal, which was 7 miles from the dock, storage and electrode plant at Ardalstangen on Sognefjord. When Ardal and Sunndal were planned the problem of loss of energy in the transfer of electrical power had not been solved. Ardal was the best location to minimize this loss. Since the transfer problem was later solved it is unlikely that Ardal and Sunndalsøra would have been chosen again as locations. Both Alnor Aluminum Norway A/S and A/S Sør-Norge Aluminium had better locations with respect to available land for expansion, wind

conditions to reduce flouride damage, proximity to communications and transportation facilities, and distance to the main European markets.

ASV's policy of remaining non-integrated and depending instead on long term supply, transportation and sales contracts had been criticized as a policy of risk aversion rather than profit maximization.³⁷ This was partly true. Aage Owe, former President of ASV wrote, "The reason for this planned policy, where security was the main motive, was because of concern for the two industrial locations of Ardal and Sunndalsøra, whose 15,000 inhabitants are really entirely dependent on one company producing one product. We felt a strong responsibility. The same concern played a role in deciding on the barter agreements for alumina and two of the loans"³⁸ If there were a difference between ASV and a privately-owned firm it would probably be in connection with this concern for maintaining stable employment in the two locations which were otherwise underdeveloped regions. However, given the same locations privately-owned firms might have followed the same policy in the realization that it makes good long run business sense to live within the constraints of national employment goals.

Despite the policy of risk aversion, ASV has never had a loss year and has been one of the most profitable enterprises in Norwegian history. Exhibit 5 shows ASV's balance sheet as of December 31, 1966, after 18 years of operation and just prior to the partnership with Alcan. Retained earnings and reserve funds were kr. 113.5 million (\$15.9 million) or almost equal to the book value of the common stock. Dividends of about kr. 52 million (\$7.3 million) had been paid to the government. Income and wealth taxes equalling about kr. 196 million (\$27.4 million) had been paid to national and local authorities.³⁹ Among all Norwegian manufacturing and mining enterprises, ASV ranked fourth in sales (kr. 562 million , or \$78.7 million), third in

exports (kr.543 million, or \$76 million), seventh in employment (3400) and second in earnings before taxes (kr.61 million, or \$8.4 million).⁴⁰ Based on Alcan's purchase price for 50% of ASV common stock, which was 1.1 million shares of Alcan stock then selling at an average price (first 6 months of 1960) of \$36.60, plus \$4 million cash, ASV's total market value would have been about Kr. 632 million (\$88.5 million) or about 5.5 times the original and subsequent government investment in ASV.

Exhibit 5

ARDAL OG SUNNDAL VERK DECEMBER 31, 1966 BALANCE SHEET

(kr. 1 million)*

Assets

Cash		kr. 71.3
Securities		2.4
Accounts receivable		114.9
Inventory (finished goods, work in process and raw materials)		95.6
Plant and equipment at cost	kr. 1,174.9	
less depreciation	865.7	
plus prepaid equipment to be delivered	16.7	
Net plant and equipment		325.9
TOTAL ASSETS		kr. 610.0

Liabilities

Accounts payable (including taxes and unpaid dividends)	kr. 132.9
Unsecured dollar loan from Alcoa	107.3
Long term debt secured by mortgages	41.3
Retained earnings and reserve funds	113.5
Common stock	15.0
TOTAL LIABILITIES	kr. 610.0

Source: A/S Ardal og Sunndal Verk Annual Report 1966 (Oslo, 1968), pp. 24-25.

* 7.14 krone equal \$1.00. One million krone approximates \$140,000.

The Alcan Partnership

During the last decade there has been a structural change within the world aluminum industry. The large integrated concerns have followed a policy of buying up the fabricators of aluminum semi-manufactures. Fabricators with an aggregate capacity of over 1 million tons of aluminum were purchased by the integrated concerns during the ten years period 1957-1966.⁴¹ This hurt ASV to the extent that customers worth sales of 50,000 tons per year were thereby lost, and there was a prospect for losing still more despite favorable price concessions given by ASV. For example, ASV's share of the Swedish market fell from 30% to 6% and its share of the Danish market from 41% to 21%. Takeovers of two customers in the United States alone in 1964 and 1965 cost ASV annual sales of 25,000 tons.

Development of bauxite reserves and production of alumina on an economic scale is so capital intensive that barriers to entry have been high, but principally of monetary nature rather than technical or competitive. As of 1966, ASV management calculated that the eight integrated concerns (not including the Communist world) accounted for 75% of all bauxite production, 95% of alumina production, 85% of aluminum production, and 55-65% of semi-manufactures production.⁴² Although ASV was assured of alumina supplies from Alcan through 1981 there was no guarantee that deliveries would be continued after that year. With 95% of alumina production controlled by the integrated concerns, ASV might have been forced in the future to invest in alumina and even bauxite production. Critics of the subsequent Alcan agreement felt that investment in alumina and fabrication facilities might have been a profitable feature for ASV because its aluminum capacity was large enough to support economic size alumina, bauxite and semi-manufacturing operations.

However, this alternative was rejected by ASV because:⁴³

1. The investment would have been so large as to weaken ASV's financial position and strength in aluminum ingots.
2. The bauxite operation would probably have been located in a relatively undeveloped and politically unstable country.
3. Capital export from Norway would be used to support employment outside of Norway at a time when Norway required a large capital import to sustain its current level of employment.
4. Semi-manufactures exported from Norway would meet high transportation costs and tariff barriers in the EEC, and sharp competition from modern plants with considerable overcapacity in EFTA and North America.
5. Semi-manufactures from ASV would compete with its own customers many of whom preferred ASV because it was an independent non-integrated producer.

Of these reasons, only the foreign employment and capital export arguments (3) could be interpreted as manifestations of government ownership of ASV. The other arguments would have made sense to any other privately-owned company.

An alternative to vertical integration by ASV itself was partnership with one of the already integrated firms. ASV's management took the initiative to carry on informal discussions with a number of integrated firms, including Alcan. The long cooperation with Alcan led to ASV's management placing considerable weight on an informal response Alcan made by letter of February 11, 1966. On March 19, 1966, ASV's Board of Directors asked the Industry Department for permission to negotiate secretly with Alcan. On May 26, 1966 the government via the Industry Department gave ASV the following negotiating instructions:⁴⁴

1. First investigate the possibility of getting an agreement which assures ASV sales of a reasonable portion of its production to Alcan but which does not include Alcan's taking over common stock in ASV.
2. If such an agreement cannot be reached, try to work out an agreement whereby Alcan takes over less than 50% of the common stock

of ASV, preferably 40% or less. If Alcan also clearly rejects a minority interest in ASV, the government is willing under pressure to accept negotiations on the basis of Alcan taking over 50% of ASV's common stock, but the Norwegian group must have the deciding vote on the board of directors.

3. Try to obtain the deciding vote for the Norwegian group in the "stockholders committee" and annual meeting of stockholders.
4. Evaluate what would be a fair exchange basis for ASV's common stock. It should be remembered that the book value of ASV's assets is low, partly because the assets were taken over at low prices, and partly because of accelerated depreciation over the years. At the same time, the market value of Alcan's common stock might be a little higher than the actual net worth of the company.
5. Assure that Alcan pays a satisfactory price for ASV's products.
6. See that the government can dispose of its shares in Alcan if desirable.
7. Try to obtain a guarantee that Alcan's existing fabrication facilities in Norway (A/S Nordisk Aluminiumindustri) can be expanded and new fabrication facilities built (eventually in ASV's name) as soon as sales conditions permit.
8. Try to obtain part ownership for ASV in some of Alcan's fabrication facilities in Scandinavia.
9. Try to obtain Norwegian representation on the board of directors of some of Alcan's fabrication companies in West Europe so that ASV can better follow developments in the fabrication sector in Europe.
10. Include in the agreement a clause permitting ASV to go into activities other than aluminum in the future.
11. Include in the agreement a guarantee that Alcan will not oppose delivery of ingots from ASV to other companies which might start fabricating in Norway.
12. Try to obtain a guarantee from Alcan that ASV's ingot production will be expanded in the future.
13. Try to obtain a guarantee from Alcan that there will be the least possible production reduction in Norway during periods of overcapacity.
14. Ensure ASV's raw material requirements when the current alumina contract with Alcan expires in 1981, with a guarantee that ASV will be given an option for renewal and eventually an expansion

of its alumina contracts. Chances for building an alumina facility in Norway to cover ASV's needs should also be examined.

The government assumed that ASV would hire a well-recognized American corporate lawyer to advise its Board of Directors during the negotiations. Furthermore, the Board of Directors was required to employ recognized consultants to help appraise stock values. The government also stated that it would stand free to decide on the agreement between Alcan and ASV when it was worked out. Finally, negotiations and debate on the agreement in Parliament were to be conducted in secrecy.

In evaluating the negotiation instructions, it is clear that ASV was not expected merely to obtain the highest value for its shares independent of a number of national economic goals, such as might be the case in a purely private merger negotiation. In particular, instructions 7, 11, and 13 must be considered constraints with a national rather than profit orientation.

Negotiations between ASV and Alcan were carried out in New York in June, 1966, and in Copenhagen a month later. A draft agreement was forwarded by ASV to the Industry Department on August 24, 1966 with a recommendation of approval. Alcan had signed the agreement and gave the Government until December 15, 1966 to approve. Parliament was formally informed of the draft on November 4, 1966 by the Industry Department.⁴⁵ On December 9, 1966 the augmented Parliamentary Forest, Waterways and Industry Committee presented a position paper recommending approval of the draft agreement. In a closed session on December 13, 1966 Parliament debated and finally approved the ASV-Alcan partnership. Only 3 out of 150 votes were cast against approval. The partnership went into force on January 17, 1967. The fact that less than a year elapsed from the start of discussions with Alcan to the start of the ASV-Alcan partnership is an indication that

a Government-owned company can move as rapidly as most privately-owned companies in important decision matters.

The final agreement was actually two agreements. The first, an agreement between the Norwegian Government, Alcan, and ASV, included the following key clauses: ⁴⁶

1. Goals
The Government as owner of ASV is interested in securing ASV alumina or bauxite for all time for use in developing the present and future aluminum production in a profitable manner. The Government is also interested in development of aluminum fabrication in Norway. Alcan wishes to secure for all time supplies of aluminum for its fabricating plants, especially in Western Europe.
2. Exchange of Alcan and ASV shares
The Government transfers to Alcan 57,500 shares in ASV (one-half of total). Alcan transfers to the Government 1.1 million shares of Alcan (3% of the total outstanding) plus \$4 million (paid in five annual installments).
3. Sale of Alcan Shares
The Government has the right to sell immediately up to 100,000 shares of Alcan but declares that it does not intend to sell the rest. The Government can transfer its Alcan shares to a company controlled by the Government or a Norwegian citizen, or to a Norwegian company that Alcan accepts.
4. Sale of ASV shares
Alcan can transfer its ASV shares to any company controlled by Alcan but not to other parties without approval of the Government. The Government has the right of first refusal if Alcan wishes to sell its ASV shares to others. The Government can sell its ASV shares to a Norwegian company which does not have a significant interest in, or a connection with, a large aluminum producer or fabricator.
5. ASV's Board of Directors and Stockholders' Committee
The Government has the right to elect half of ASV's Board of Directors and Stockholders' Committee, including the Chairman and Vice Chairman and Chairman of the annual stockholder's meeting. If there is a tie vote the Chairman or Vice Chairman has the deciding vote, except if it is a case of issue of ⁴⁷debt or purchase or sale of assets which are over Kr. 1 million. Alcan has the right to elect half of the members of the Board of Directors but at least one of them must be a Norwegian citizen resident in Norway. Alcan elects half of the Stockholders' Committee.
6. Representation on Alcan's Board of Directors
As long as the Government or a Norwegian Company has at least 600,000 Alcan shares, Alcan will do its best to elect a designee

of ASV's Board of Directors to the Board of Directors of Alcan Industries Limited (U.K.), Alcan Aluminiums-Werke GMBH (West Germany), and Alcan Jamaica Limited.

7. Possession of shares in NACO - Nordisk

The partners find it desirable for ASV to take over all of the shares in A/S Norsk Aluminium Company (NACO) and A/S Nordisk Aluminiumindustri (Nordisk).⁴⁸ Alcan obligates itself to transfer to ASV its shares in NACO-Nordisk at a price to be agreed upon between the Government and Alcan. No taxes will be assessed on this transfer.

8. Fabrication of aluminum

The partners will do their best to establish a close production and sales cooperation among Alcan, ASV, Nordisk and Raufoss Ammunisjonsfabrikker (the Government-run ammunition producer which also has a small aluminum fabrication section), with the object being to increase aluminum fabrication in Norway. The Government and Alcan will encourage ASV to build and operate new fabricating facilities in Norway as soon as it is economically justified in the opinion of ASV's Board of Directors.

9. Other Clauses

ASV's existing concessions (for electric power) will continue in force. ASV can enter non-aluminum fields if it appears profitable. Disagreements among the partners are to be settled by arbitration in accordance with the World Bank agreement of March 18, 1965.

The second agreement, that between Alcan and ASV, contained among others the following key clauses:

1. Technical and research cooperation

Alcan and ASV will start a close cooperation in technical questions on an equal basis. Experimental and research results, production experience, and technical know-how will be exchanged. If Alcan's new process for producing aluminum directly from bauxite, which is now under development, is commercially useable, ASV is assured a license for this method.

2. Sale

Alcan obligates itself starting in 1967 to take over a steadily increasing quantity of aluminum which ASV has for sale after delivery of the aluminum required as payment for alumina, etc. ASV is obliged to sell the agreed upon quantity to Alcan. ASV maintains its sales organization and has the right to sell the aluminum which is not sold to Alcan to fabricators in Norway or other countries. If ASV has trouble selling its surplus aluminum, Alcan will attempt to find buyers for ASV's aluminum.

3. Price

Alcan will pay a basic price for standard aluminum ingots in the amount agreed upon above. This basic price will be index adjusted.

It might be necessary to change the basic price if Norway enters the EEC and the index adjusted price does not correspond to developments in the market price. Alcan is assured of quantity discounts when its purchase of ASV aluminum is greater than certain amounts.

4. Production

The partners are agreed that ASV is the natural supplier of aluminum to the fabricators in Western Europe, and that it should increase its capacity in fact with Alcan's fabricators in Western Europe. The goal of both partners is to maintain full capacity production in ASV's plants at all times. If it should be necessary to reduce production it is ASV's Board of Directors which shall decide if it should be done.

5. Raw materials

ASV will have the option to renew the alumina barter agreement in an amount necessary to cover all of ASV's needs. Terms will be about the same as now, except for adjustments corresponding to technical, cost, and supply changes. In case ASV changes over to production of aluminum directly from bauxite, Alcan will do its best to supply bauxite instead of alumina. The partners will seriously consider building an alumina plant in Norway, assuming both partners agree that there is a profitable economic basis for it.

6. Other clauses

There are also certain clauses relating to mutual exchange of information in cases of technical and economic importance, auditing, and arbitration. The partnership is expected to endure for an unlimited time period.

The Government's acceptance of these agreements was predicated on a number of perceived advantages including the following:⁴⁹

1. Guaranteed supplies of alumina to ASV in perpetuity.
2. Guaranteed sales of an increasing quantity of aluminum to Alcan's fabrication facilities in Western Europe (1968 capacity equal to 500,000 tons) at better prices than ASV had been able to get in 1965.
3. Improved technical abilities due to the mutual exchange of experience, research and development results, including immediate access to Alcan's bauxite-to-aluminum process if it turns out to be commercially feasible.
4. Active participation by ASV in fabrication in Norway through ownership and possible expansion of Nordisk, plus cooperation with Raufoss and other possible Norwegian fabricators. This will increase chances for specialization and thus better export possibilities. Representation by ASV on the boards of directors of the two most important Alcan fabricators in Europe should help in this effort.

5. A fair price for the exchange of shares. In this connection, Price Waterhouse and Company was hired to establish a comparable book net worth figure for both ASV and Alcan, as well as a value based on income producing ability using 1964 and 1965 plus budgeted 1966-1968 as a basis. The latter method was finally chosen for setting the value of the shares. ASV also employed both the First Boston Corporation and Drexel Harriman Ripley (American investment banking firms) to evaluate the present and future value of Alcan's shares as a long term investment. The latter firm also judged the agreed upon basis for exchange as "fair and adequate."⁵⁰ Price Waterhouse and Drexel Harriman Ripley also valued the shares of NACO and Nordisk to establish the exchange rate for ASV's takeover of their shares.
6. An open possibility to build an alumina plant in Norway.
7. In view of the alternatives to partnership (i.e., an attempt by ASV alone to vertically integrate, or if not, continue as was), ASV's bargaining position was as good now as it was likely to be in the future.

Officials within the Alcan management were of the opinion that ASV had more reason to seek these agreements than Alcan, though admittedly very beneficial to both. As the trend in the aluminum industry continued towards integration, ASV saw its outlets being taken over by producers as they formed integrated units. There being virtually no domestic market in Norway, ASV could not integrate without taking a foreign partner, and Alcan was a logical choice. The new company could be sure of Alcan's continuing aid both in obtaining raw material and providing a market. It would, however, continue its own marketing organization world-wide, including the United States. The possibility of the widespread use of nuclear power in aluminum smelting was another factor leading ASV to doubt the long term viability of its position, for in that case Norway might lose its natural advantage of cheap electric power. Such was the view of the Alcan management.⁵¹

The advantage to Alcan, as articulated by its management, was that the new company provided Alcan with the first large scale ingot capacity located

near its fabricating facilities in the U.K. and Europe. Should Norway enter the EEC, its aluminum production would then be inside the tariff wall.

It was of possible significance that Alcan was participating in two other mixed ventures at the time of making its 1966 proposal to ASV. In 1964, Alcan had entered into a joint aluminum mill venture in Germany with Vereinigte Aluminiumwerke (VAW), a company owned by the German government. Even longer before, about 1957, Alcan had set up a small fabricating plant in partnership with the government of Ghana. In general terms, partnerships with governments were not looked upon with favor by the Alcan management. However, firm spokesmen denied that this was a policy, only a point of view. VAW and ASV were acceptable because the Alcan management felt that they were indistinguishable from private companies. In the Ghana case no other partner had been available. Partnership with an entity of a communist or socialist government would be looked upon with even less favor.⁵²

In the ASV case, relations with Alcan had been extremely close over the years on both a personal and corporate basis to the extent that Alcan management later were of the opinion that ASV would have considered no foreign partner other than Alcan.

Indeed, not everyone in Norway was enthusiastic about the Alcan partnership. During the debate in Parliament, a number of members doubted the need for secret agreements and the short time for debate before the offer expired.⁵³ Furthermore, the former Norwegian Prime Minister, Einar Gerhardsen (Labor), expressed strong doubt about the desirability of letting a successful Government-owned company be shared with private foreign stockholders who had little sympathy for an experiment in national industries. ASV was a particular favorite of the Labor Party because some of the other Government-owned companies, such as A/S Norsk Jernverk and A/S Norsk Koksverk, had hardly been success stories seen from a financial viewpoint. Nevertheless, the Labor Party did approve the agreements out of concern for the employment situation

at Ardal and Sunndalsøra. This was another example of national economic goals dominating pure business motives.

Some business and academic critics have argued that the situation was not nearly as black as that painted by ASV's Board of Directors.⁵⁴ In particular, they claimed that it was still not too late for ASV to establish fabricating facilities either in Norway or in West Europe. A/S Alnor was building a capacity for 50,000 tons of fabrication at Karmøy, Norway, with the expectation that most of it could be exported. Supplies of bauxite were not hard to purchase on long term contracts and could have been used to support an alumina operation in Norway. Some felt that ASV was strong enough financially to support both the alumina and fabrication investments.

The President of ASV, Jean Michelet, believed that Alcan likewise gained significant advantages in the partnership.⁵⁵ Alcan needed additional supplies of aluminum ingots to balance its expanded fabricating capacity in Europe. A new smelter would have taken several years to build and would have provided too much capacity at one time "in stair step fashion." In any case, the required capital would have had to be raised at a time of high interest rates and a tight capital market. By purchasing 50% of ASV essentially with an exchange of shares, Alcan was able to gain access to a gradually increasing quantity of aluminum starting at once without recourse to the capital market. It also would be able to coordinate its own activities with ASV's, whereas previously ASV was a competitor and often considered a maverick by the integrated concerns.

Developments Since the Alcan Partnership

Although it is too early to evaluate the results of the ASV-Alcan joint venture, there have been some signs that the hopes of the Norwegian Government will be realized.

Close technical cooperation was begun at once (1967). One obvious result was a decision on the part of ASV to change the type of smelting ovens to be installed at Sunndal III to a type recommended by Alcan's experience, namely, closed ovens with pre-baked anodes.⁵⁶ This type oven would enable Sunndal III to increase its capacity by 53,000 tons of aluminum per year rather than the planned 45,000 tons. It would also reduce the air pollution problem.

A second sign of cooperation was the announcement on August 9, 1968, that Ardal I would be entirely rebuilt while at the same time increasing its capacity from 32,000 tons to 85,000 tons of aluminum. This would give the Ardal plant a total capacity of about 170,000 tons, and ASV a combined capacity of about 320,000 tons. The Alcan-type closed ovens were to be used. Total cost was estimated at kr. 350 million (\$49 million).

A third area of cooperation was in fabrication facilities. ASV took over all of the shares in NACO and Nordisk during 1967. This required ASV to increase its capital to kr. 150 million (\$21 million) of common stock and kr. 42 million (\$5.9 million) of preferred stock. The preferred stock and some of the Government's Alcan shares were used to buy A/S Høyanger's shares in NACO and Nordisk. Alcan also transferred its shares in NACO and Nordisk to ASV. The new ASV consolidated balance sheet as of December 31, 1968, is shown in Exhibit 6.

Further technical progress was evident in the announcement by ASV that it would join Det Norske Zinkkompani A/S in a joint venture to produce aluminum fluoride, one of the raw materials used to produce aluminum.⁵⁷ This raw material had previously been imported to Norway. The new plant was to be located at Eitrheim in Odda and would have a capacity of 20,000 tons of aluminum fluoride per year beginning in 1970.

Meanwhile, Nordisk has become the coordinator and developer of fabrication facilities for the ASV concern. Its own subsidiary, Metallemballasje, has

Exhibit 6

CONSOLIDATED ASV BALANCE SHEET AS OF DECEMBER 31, 1968

(kr. 1 million)*

Assets

Cash		kr. 61.9
Securities and investments in other companies		32.6
Accounts receivable		185.5
Inventory		165.6
Plant and equipment at cost	kr. 1,706.6	
less depreciation	1,197.3	
plus prepaid equipment to be delivered	<u>11.9</u>	
Net plant and equipment		520.6
Difference between book value and purchase price of shares in subsidiaries		<u>40.4</u>
TOTAL ASSETS		kr. 1,006.6

Liabilities

Accounts payable (including taxes and unpaid dividends)	kr. 271.3
Unsecured long-term loans	147.6
Long-term debt secured by mortgages	215.9
Retained earnings and reserve funds	188.2
Preferred stock	33.6
Common stock	<u>150.0</u>
TOTAL LIABILITIES	kr. 1,006.6

Source: A/S Ardal og Sunndal Verk Annual Report 1968 (Oslo, 1969).

* 7.14 kroner equal \$1.00. One million kroner approximates \$140,000.

already expanded its fabrication capacity by taking over facilities of several smaller independent Norwegian fabricators. A new division has been established at Vik in Sogn to produce highway equipment. A production and sales cooperation has been established with Raufoss Ammunisjonsfabrikker for extruded products, which Nordisk itself does not produce.

In other developments since the joint venture, ASV joined the Government, Elektrokemisk A/S and A/S Sulitjelma Gruber (owned by Elektrokemisk A/S) to investigate the economic possibilities of utilizing A/S Joma Bergverks' rights to the ore fields in Joma and Gjersvik.

Hopes for an ASV license to produce aluminum directly from bauxite were premature. Alcan announced in 1968 that research results had not resulted in a commercially useful process and further work had been temporarily cancelled.⁵⁸ A feasibility study of alumina production in Norway was underway by mid-1968.

The organizational changes in ASV are described in the next section. For the moment, it should be noted that in accordance with the agreement, ASV had a representative on the Board of Directors of Alcan Industries Limited (UK), Alcan Aluminium-Werke GmbH (W. Germany) and Alcan Jamaica Limited. In addition, the Norwegian Government had its representative on the Board of Directors of Alcan Aluminium Limited itself.

According to Alcan spokesmen, the Norwegian directors have not been chosen for any apparent political bias. The ASV Chairman and Managing Director are both Norwegian businessmen. The other Norwegian directors are a Labor M.P., the mayor of a town which houses an ASV plant, and the managing director of another government enterprise. There were no political guarantees for Alcan in the agreement, but proposals in respect to certain important matters must be placed before a shareholders meeting and can only be decided by a vote of two-thirds or more of the shares represented there. In addition, it is stated in the agreement that ASV will be managed and developed according

to sound business principles to the benefit of the shareholders. Since Alcan management realized that this was the manner in which ASV had been run since its formation, Alcan reported no apprehensions on this score. Taxation has always been, and would continue to be the same as for any Norwegian company, as is the availability of foreign exchange. Management of the company is entirely Norwegian. Alcan management generally expressed great confidence in the quality of the ASV management.⁵⁹

Organizational Structure

When ASV was organized in 1947 as a 100% Government-owned enterprise, there was a good deal of discussion about the type of organizational form which would best serve the national goals. It was decided to experiment with using the normal commercial corporation form, which later became standard for most Government enterprises. At the time, one of the main arguments favoring this decision was the fact that ASV would be selling almost entirely on the competitive export market, where industrial expertise and flexible decision-making were necessary for survival. The Labor Party was also determined to prove that a Government-owned enterprise could succeed economically without Government subsidies. The possibility of untimely interference in daily decision making by non-technical officials in the Industry Department, or by politicians in Parliament, convinced the Labor Party that it would be best to carry on the operational aspects of an aluminum business in the same manner as in the larger competing aluminum producers. It was felt that the national interests could still be protected by actively exercising the owner's right to choose the board of directors, president, and a majority of the stockholders' committee. Moreover, in the case of power-using industries, such as aluminum, direct control could be exercised

through the Concession Laws (see page 2).

The first ASV President, Aage Owe, insisted that ASV be run on a purely business basis, and made this stipulation a requirement for his acceptance of the President's position. He received strong support from the first Board of Directors, particularly its Chairman, Professor Bakkevik.

During the period of Owe's presidency, 1947-1965, ASV's internal organization evolved from one designed to meet the needs of new construction to one more oriented to meet production and sales problems. Owe was personally a dynamic and forceful leader in the pattern of many private entrepreneurs who are able to guide a firm from inception to semi-maturity. Although his background was in the margarine business, he was able to learn the technical side of the aluminum business and gain the strong support of his Board of Directors. Professor Bakkevik, who was an electrical engineer with both industrial and academic experience, was particularly influential in the early years. Most of the other Board members through the years were "outside directors" with little or no experience in aluminum. This tradition of an "outside board of directors" undoubtedly helped strengthen the position of the President. It gave him perhaps even more flexibility than might be expected in a large private corporation controlled by a board composed of professional management and "inside members", such as is the case in many of the large international aluminum companies.

Although there was a formal organizational structure on paper, informal channels of communication linked the President with nearly all decisions even at fairly low levels of the organization. Owe was acquainted personally with most of ASV's staff and a good share of the workers in the early years. Most observers would have characterized the organization as very thinly

staffed at the top, with strong personal leadership by President Owe.

In 1965 Owe retired and the current President, Jean Michelet, replaced him. Michelet's previous experience was as President of Union A/S, Norway's third largest paper company. By 1965 ASV had grown to such a size that personal direction of activities had to give way to more formalized committees and more decentralized operational decision-making centers. Headquarters staff in Oslo was expanded to include a formal planning section. A Planning Committee composed of the Planning Director, V.P. Finance, V.P. Production and Engineering, V.P. Sales, the Executive Vice President, and the Plant Managers, was formed to advise the President on corporate goals, strategies, and tactics.

The organization of ASV as of January, 1968 is shown in Exhibits 7-10. Exhibit 7 diagrams the relationship of the Oslo headquarters to the various plants and subsidiaries. NACO and Nordisk remained as legal corporate entities but were otherwise fully integrated into ASV. NACO's Høyanger plant had the same status as the plants at Ardal and Sunndalsøra. NACO possessed the same Board of Directors as ASV, but Nordisk had its own Board of Directors, a majority of which were also on the ASV Board. Nordisk had become the only fabricating division of ASV, with its own chief operating officer responsible to the Nordisk Board of Directors. The Chairman of this Board was President Michelet.

Ownership control was exerted primarily through ASV's Board of Directors. In accordance with the agreement between ASV, the Norwegian Government, and Alcan, five members had been appointed by Alcan and five by the Norwegian Government (Exhibit 8). One of the five Alcan appointees, a Norwegian citizen by the name of Frederik M. Bugge, had represented Alcan's interests in NACO and DNN. It is worth noting that Alcan named its top operating officials

to the ASV Board, including the Alcan President, Nathanael V. Davis. One wonders if their technical knowledge of the aluminum industry might exert a dominant influence on the non-technical Norwegian members of the Board. The Norwegian Chairman of the Board, of course, has the deciding vote in case of an even split of the Board on normal operating matters. In case of decisions concerning the floating of bonds, mortgaging of property, building of an aluminum oxide plant, merger or sale of corporate assets, or change of auditors, there must be agreement between the partners because the deciding vote clause does not hold. In practice, there was a feeling by both parties that a partnership could not work unless they were in agreement on important decisions, a fact which made it highly unlikely that the deciding vote clause would ever be used.

It is important to note that ASV was in no way integrated into the consolidated Alcan concern, either for the consolidated financial accounts or the formal organization chart.⁶⁰

Since the partnership went into effect as of January 17, 1967, there is not yet enough experience to determine how the spirit of cooperation on an equally split board of directors will survive difficult times as well as the good. The Norwegians are relying on 20 years of favorable cooperation on barter deals with Alcan and a generally favorable impression of the integrity and reliability of Alcan's present management.

The agreement with Alcan stipulates that half of the members of ASV's Stockholders' Committee should be elected by Alcan and half by the Norwegian Government (including the Chairman and Vice Chairman). The deciding vote clause also applies to the Stockholders' Committee's decisions. Exhibit 9 shows the composition of the Stockholders' Committee as of January, 1968.

Exhibit 7

ASV AND SUBSIDIARIES

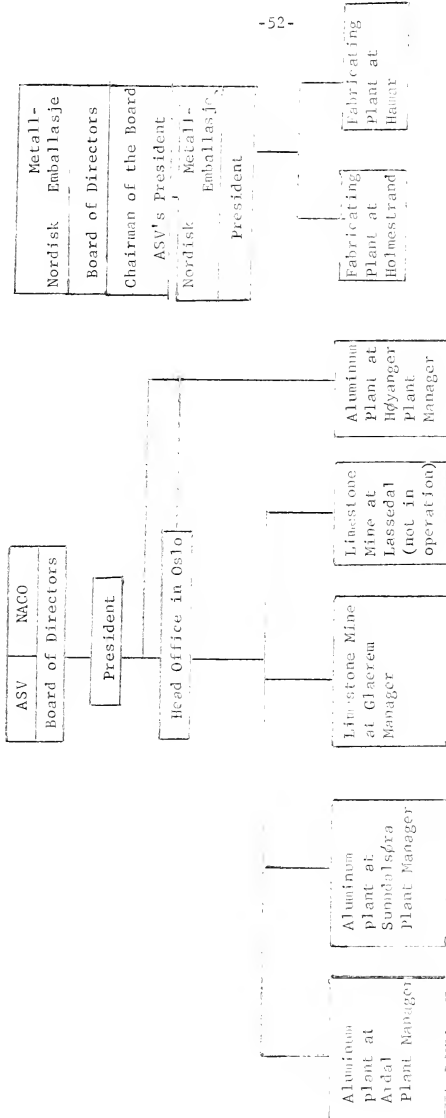


Exhibit 8

BOARD OF DIRECTORS OF ASV AS OF JANUARY, 1969

Norwegian Appointees

Jean Michelet, Director General ASV, Oslo

Onar Onarheim, Chairman of the Board of Directors of ASV, President of
A/S Akers Mekaniske Verksted, Oslo

Gunner Alf Larsen, Vice Chairman of the Board of ASV, member of the
Norwegian Parliament (Labor Party)

Bjarne Hurlen, Managing Director, Raufoss Ammunisjonsfabrikker og
Kongsberg Vapenfabrikk, Kongsberg

Oskar Edøy, Mayor, Municipality of Sunndal, Sunndalsøra

Alcan Appointees

Frederik M. Bugge, Lawyer, Oslo

P. J. Elton, Managing Director of Alcan Aluminium (U.K.) Limited, London

Dana T. Bartholomew, Executive Vice President, Alcan Aluminium Limited, Montreal

Nathanael V. Davis, President of Alcan Aluminium Limited, Montreal

C. E. V. Jensen, Executive, Alcan Aluminium (U.K.) Limited, London

Source: A/S Ardal og Sunndal Verk Annual Report 1968, (oslo, 1969).

Exhibit 9

THE STOCKHOLDERS' COMMITTEE OF ASV AS OF JANUARY, 1969

1. Finn T. Isaksen, Director, Chairman
2. Bernt Ingvaldsen, Speaker of Parliament, Vice Chairman
3. Andreas Andersen, Director
4. Herman Christiansen, Engineer
5. Dag Coward, Professor
6. Per M. Hansson, Director
7. Leif Andersen, Manager
8. Dag Klaveness, Shipowner
9. Pal Sandvik, Director
10. Johan Melander, Bank President
11. Nils Ramm, Managing Director
12. Kunt Rasmussen, Lawyer
13. Jens Solein, Chief Accountant
14. Ingvald Waller, Factory Worker
15. Magne Øvrebøtn, Foreman
16. Lars Aasgard, Member of Parliament

Source: A/S Ardal og Sunndal Verk Annual Report 1968, (Oslo, 1969).

Although at first sight the Stockholders' Committee seems to have an unlikely assortment of individuals, closer inspection shows that interests represented include the workers, local municipalities, and the Government, as well as general industrial and professional experience. Since all members are Norwegian it is obvious that Alcan did not choose to exert ownership control through the Stockholders' Committee.

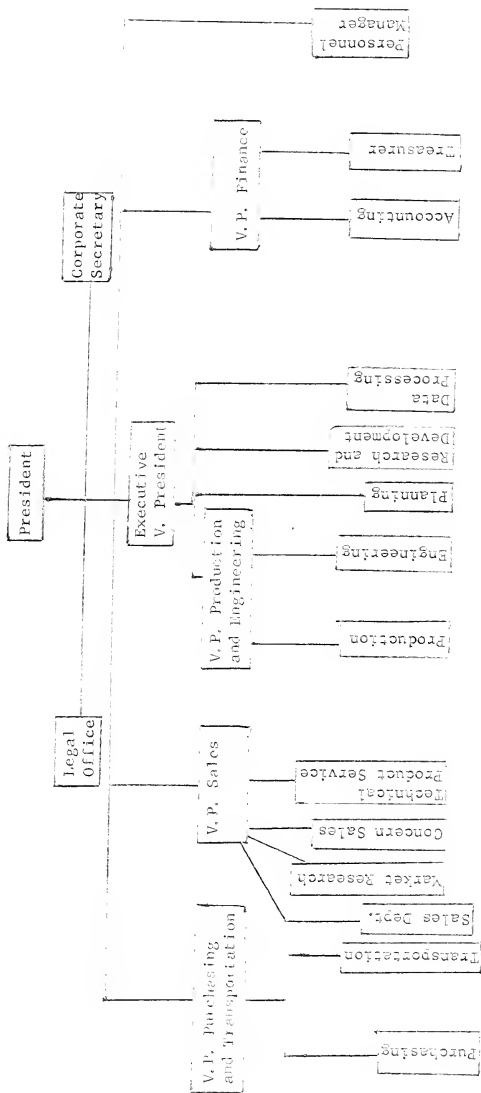
As mentioned previously, the Minister of Industry or his representative votes the Government's 50% share of ASV's common stock. A representative for Alcan votes its stock. There have not been enough annual stockholders' meetings to determine whether they will merely provide a review function or become involved in policy decisions. It is likely that most decisions and any controversies will be settled on the ASV Board of Director level, or by direct contact between ASV's and Alcan's operating managements.

The organization of ASV's headquarters in Oslo is shown in Exhibit 10. In a formal sense, the Vice Presidents of Finance, Sales, and Purchasing and Transportation report directly to President Michelet. The Vice President of Production and Engineering, the Plant Managers, and the Division Heads of Planning, Research and Development, and Data Processing report to the Executive Vice President. However, the latter are also members of the important Planning Committee. It might be noted that there is nothing unusual about the formal organization which might distinguish it from privately-owned Norwegian Corporations.

As in most other organizations, the formal channels of communication are supplemented by informal channels, but the field interviews gave the impression that President Michelet does not get as deeply involved in details as former President Owe, preferring to work as far as practical through the formal organization

Exhibit 10

ORGANIZATION OF ASV HEADQUARTERS IN OSLO



as supplemented by four standing committees (Planning, Systems and Procedures, Quality Control and Production Methods).

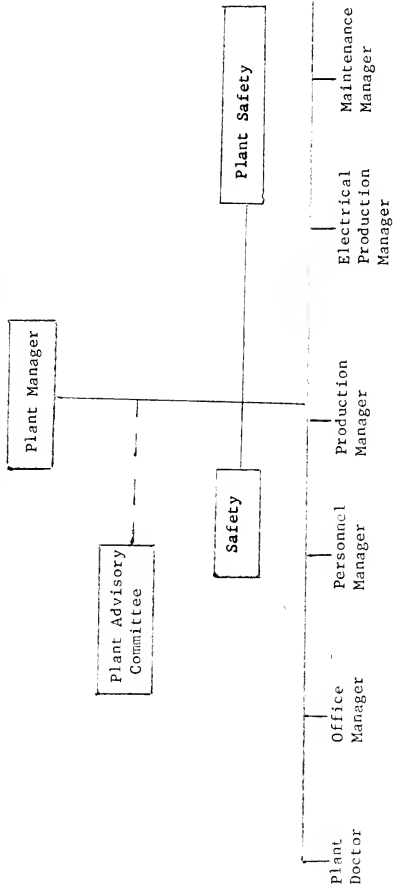
There are written guidelines for each of the key positions. The guidelines stipulate lines of authority, responsibility, and job content. There are also written instructions for certain routine jobs. The guidelines are not particularly restrictive and there is a "common sense" clause which covers situations requiring flexibility.

Each key position is given a spending authority.⁶¹ For example, the President can spend up to kr. 1 million (\$140,000) for each individual item specified in the maintenance and modernization budget, and a maximum of kr. 250,000 (\$35,000) for projects outside the budget, without approval of the Board of Directors. On the other hand, in accordance with Norwegian corporate law, sale or purchase of fixed assets must be approved by the Board of Directors. Each of ASV's Plant Managers can spend up to kr. 100,000 (\$14,000) for each individual item specified in their budgets without going to the Executive Vice President. It should be noted that these were relatively liberal authorizations compared to the corresponding amounts allowed by other Norwegian aluminum firms, thereby enabling ASV to make decisions on normal operating matters at least as quickly, if not more quickly, than its Norwegian competitors.

The organization chart of a typical ASV smelter is shown in Exhibit 11. (Ardal Verk). Production responsibility rests primarily on the Plant Manager's shoulders, whereas sales and shipping of aluminum ingots are handled entirely by Headquarters in Oslo.⁶² Purchase and shipping of aluminum oxide and other raw materials are covered by long term contracts negotiated by Headquarters; however, the timing and amount of delivery of individual orders is controlled by the plant. The Plant Manager can also order from suppliers not covered by contracts, but budget limitations ensure that such supplies do not cost more

Exhibit 11

ORGANIZATION CHART FOR ARDAL VERK



Source: Verksposten 1 (No. 10: A/S Ardal og Sunndal Verk, 1968), p. 17

than from the regular suppliers. Choice of individual pieces of equipment for maintenance and repair is usually made by the plant project director, although the actual purchase contract may be negotiated either by the plant or Headquarters. All imported purchases go through Headquarters. Local public relations, such as statements to the local press and social welfare projects, are handled by the plant as budgeted items. National and international public relations are carried out by Headquarters.

None of the plants could be considered profit centers, but rather limited cost centers. Each plant gathers its own cost data and is judged on controllable cost per ton of aluminum produced. However, such large costs as aluminum oxide, other raw materials, shipping, inventory, taxes, and invested capital are not under plant control. The main controllable costs include wages and salaries, plant maintenance, and local public relations.

ASV gained fabrication facilities both for semi-manufactures and finished products through the merger with A/S Nordisk Aluminiumindustri. Nordisk remains as a separate corporation and continues to use its product trade name "Høyang".⁶³ It is a well-recognized name both in Norway and abroad, particularly in the kitchenware and canning product lines. It also makes a full line of semi-manufactures on its hot and cold rolling mills. All extruded products are subcontracted to other Norwegian firms for part of the process.

Sales were formerly carried out from Oslo, but with the merger the sales headquarters for fabricated products has been moved to the Holmestrand plant site. Although Nordisk handles all sales of fabricated products for ASV, it cooperates with Alcan wherever possible and uses Alcan's market research facilities. In the past, Alcan has preferred to have Nordisk sell only to the Scandinavian Market, while other Alcan subsidiaries covered other markets. If fabricated product sales are to increase very much other export markets

must be sought. There is a possibility that this could be done through greater product specialization by each of Alcan's subsidiaries, but such has not yet been the case.

The aluminum ingot supply for Nordisk continues to come from the NACO plant at Høyanger. There has always been good cooperation between the plants, and Høyanger likes to have the opportunity to check its ingot quality by getting feedback from Nordisk. ASV may send some ingots from other plants through Nordisk for the same quality control reason.

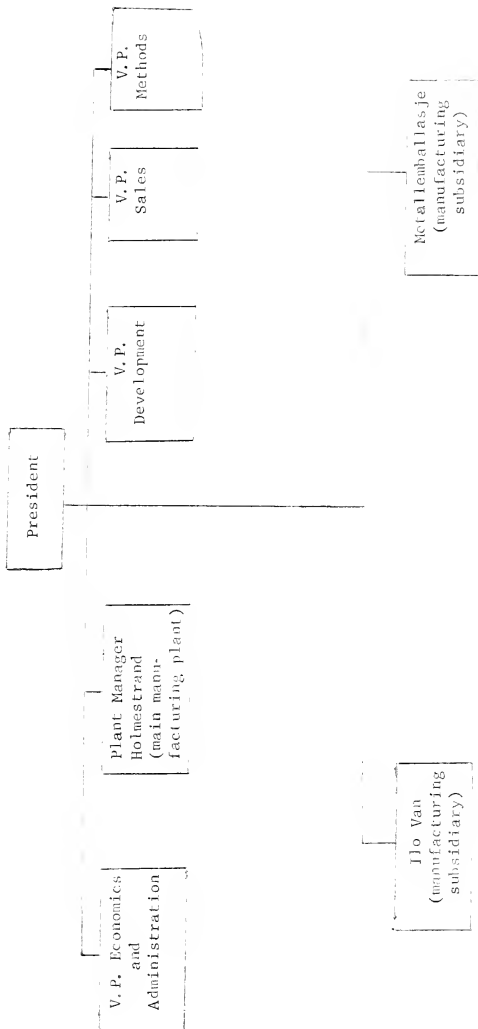
The organization chart for Nordisk is shown in Exhibit 12. In addition to the key positions shown in Exhibit 12 there are also two important committees. New product ideas generally filter in from the sales force and are first discussed by a "Working Committee", composed of the Vice President of Development, Vice President of Sales, and the Plant Manager. The proposal is then passed on for formal action by the "Product Planning Committee", composed of the President, Vice President of Development, Vice President of Sales, and Vice President of Economics and Administration.

Nordisk is a profit center with its own corporate profit and loss statement and balance sheet. As mentioned previously, it also has its own Board of Directors.

Auditing

The auditing function is carried out by a private CPA firm (Arne Heide) located in Oslo. The Government's own auditors (Riksrevisjon) do not audit ASV, which omission follows from the fact that ASV is an ordinary corporation without 100% Government ownership. The degree of disclosure by ASV, particularly in its Annual Report, is somewhat greater than a typical private Norwegian corporation. In fact, the 1967 Annual Report was awarded a prize for the

ORGANIZATION CHART FOR NORDISK



Source: Reidar Helien, "Langtidsplanlegging - Langtidsstenking", speech to the Norwegian Metallurgical Association, Trondheim, May 9, 1968.

greatest relevant disclosure and best presentation of any Norwegian corporation. Even the less successful Government-owned corporations, such as the State Iron and Steel Works (A/S Norsk Jernverk), disclose more details of operations than typical private Norwegian corporations.

Labor Relations

During the early years of the construction period there were a number of different unions represented at Ardal. Over the years, however, the Norwegian Chemical Workers' Union became dominant. As of mid-1968, there were two branches of this union at Ardal, the largest being at Øvre Ardal where the smelter pots were located and the other branch at Ardalstangen. There did not seem to be any significance to this split other than historical development. A third branch of the Chemical Workers' Union was located at Sunndalsøra and a fourth branch, at Høyanger. All of these branches belonged to the National Association of Labor Unions (LO). Each branch settled its own local grievances but the Ardal and Sunndalsøra branches bargained with ASV as a unit. The Høyanger branch had not yet been integrated with the other three but probably would be so in a short time.

There were also several smaller unions in ASV, including the Electricians' and Foremen's Unions.

Nordisk had its own major union, the Norwegian Iron and Metal Workers' Union, which bargained separately with Nordisk rather than ASV.

On the employer's side, ASV did not belong to the Norwegian Association of Employers (NAF), but bargained directly with the LO, usually patterning its settlement after the LO-NAF settlement.

Nordisk and NACO had belonged to the NAF prior to the merger and their unions, to the LO. At the moment - i.e., in mid-1968 - bargaining in these two firms continued in the old pattern rather than through ASV.

Throughout ASV's history labor relations had been quite good. There had never been a strike. Both the management and labor leaders who were interviewed felt that, for a number of reasons, labor relations were better in ASV than might be expected in a privately-owned corporation. The Labor Party had been determined to make this experiment in Government-owned industry work. It could not afford to have labor unrest which would give the non-Labor parties ammunition for their contention that Government-owned industries would mean the burial of the Labor Party. The workers, most of whom belonged to the Labor Party, were intent for the same reasons on making the experiment work. Another factor which may have played a role in the early years was the lack of prior industrial experience for most of the workers, many of whom were farmers and fishermen. They had not yet developed a distrust of industrial employers nor an identity as a "working class," and economic rewards in ASV were considerably higher and more stable than they had been in the marginal farms and fisheries. Finally, geographic isolation of Ardal and Sunndalsøra left few other alternatives for work.

A willingness to experiment with "industrial democracy" also helped to maintain good labor relations. Worker representation on the Stockholders' Committee and active plant advisory committees (bedrifts utvalg) were examples of industrial democracy.

During 1968 ASV was in the midst of an intensive four-year program to automate and modernize its plants. Output in tons per man hour had been somewhat lower in ASV than in competing American and Canadian plants, but not worse than other European plants. The low cost of Norwegian hydroelectric power had heretofore shielded the productivity gap and insured competitive total costs. Competing thermal and nuclear power sources were beginning to reduce this advantage.

The modernization program called for a reduction of ASV's workforce by 700 persons, or a corresponding increase in output with less manpower reduction. No workers would be fired, but those retiring would not be replaced. Others were being shifted to new jobs, especially in maintenance and new construction. The large scale rebuilding of Ardal I would absorb a considerable number of workers, especially since ASV had decided to carry out as much of the construction as possible with its own workforce through an expanded workshop facility.

Although no union was eager for a workforce reduction, there seemed to be a general acceptance of the need to modernize in order to guarantee stable employment for the workers. One union official explained that ASV must sell in an unprotected and competitive export market to survive. This justified its attempt to increase productivity and even its merger with Alcan. He did not think that the workers would be so agreeable to a similar modernization and merger program if ASV was selling primarily in a protected home market such as some of the other Government-owned corporations were doing.

Planning and Control

As mentioned, the planning function had been formalized since 1965 in a separate Planning Division composed of five men and in a Planning Committee composed of most of ASV's key officials.

The Planning Division had constructed a very impressive computerized simulation model consisting of 88 equations and over 120 variables. Although there was no stipulated time horizon for planning, the model had been used to analyze ASV's possible growth and profitability paths for ten years forward under varying assumptions. The Planning Division itself appeared to have highly qualified personnel, headed by a former Assistant to the Minister of Industry (Statssekretaer), several econometricians with advanced degrees from the University of Oslo, and several with business administration degrees and business experience. Although the interviewer was impressed by the Planning Division, and top management generally had become convinced of its need, not all persons who were interviewed were equally enthusiastic. It appeared that at times "the model had given unreasonable results". Improvement could be expected, of course, as the model and model builders gained more experience.

In addition to the model, ASV subscribed to at least three New York investment banking services providing periodic studies of the aluminum industry. The Planning Division maintained an up-to-the-minute status report on all new aluminum projects underway, announced changes in ownership, share of market, and similar industry figures. This kind of information had been influential in convincing ASV's management to take the initiative in seeking a partnership with one of the integrated aluminum companies.

Short term operating control was maintained partially through a rather elaborate budgeting system. There were at least five different one-year budgets plus a separate capital budget for large, long range expansion, and modernization projects.

The main annual operating budget originated in the plants. It included proposed spending on wages and salaries, raw materials, power, and other variable costs. This budget was difficult to estimate because the data was collected in August, processed at the plant, and forwarded to the Executive Vice President by November 10, before the winter snow season had begun. The levels of operations were quite dependent on the amount of hydroelectric power which could be generated. This was dependent in turn on the amount of water in the reservoirs, which was mainly a function of the amount of snow in the surrounding mountains.

The maintenance and modernization budget (anleggsbudsjettet) also originated in the plants and was processed in the same way as the operating budget. Preliminary profitability calculations were made at the plant using internal rate of return (discounted cash flow) as a basis and 10% as the required yield after taxes. It was the opinion of one of the plant managers that the profitability estimates at the plant level tended to be rather conservative because plant personnel were quite sensitive to the practical difficulties which usually occurred in carrying out a project. In his opinion, profitability estimates tended to be somewhat more optimistic at Headquarters. He nonetheless opined that Norwegians in general tended to be more conservative in their approach toward risk than their American or Canadian counterparts. On complicated or large scale projects, the Headquarters Finance Department and Planning Division were consulted on the profitability calculations. As many as seven different profit measures might eventually be used, including internal rate of return, present value, operating return, payback, break-even, return on sales, and non-discounted average rate of return on investment. Some projects, such as safety projects, could not be subjected to a profitability calculation and therefore were justified on other grounds.

By November 10 the proposed budgets were sent from the plants to the

Executive Vice President. As Chairman of the Planning Committee, he directed that the final profitability calculations and a cash budget be prepared in the Finance Department. At this level the time horizon for planning was five years. Three other budgets originating at Headquarters were likewise introduced at this point: (1) the social welfare budget (sosialbudsjettet), (2) training budget (opplaeringsbudsjettet), and (3) the research and development budget (forskningsbudsjettet). All five spending budgets were evaluated, checked for internal consistency, compared to the cash budget, and then forwarded through the President to the Board of Directors during December of each year. The training budget was given final approval by the President. The other budgets were approved by the Board of Directors.

After approval of the various budgets, spending authorization without further contact with the Board of Directors was given in accordance with the aforementioned limits for each position, i.e., kr. 1 million (\$140,000) for the President, kr. 200,000 (\$28,000) for the Executive Vice President, and kr. 100,000 (\$14,000) for the Plant Managers.

Major expansions and modernization projects were not prepared under any particular time schedule but were being planned at Headquarters at all times. When the Planning Committee and President felt that one of the projects should be started, a well documented capital request was presented to the Board of Directors at its next quarterly meeting. Profitability calculations were usually carried out for five years. Nonprofit factors, such as effect on local employment also played a role in the Board's decision but were not more important than the need to run ASV as profitably as possible. Even the largest capital expansion programs received final approval from ASV's Board of Directors, although as previously mentioned, the deciding vote clause did not hold for certain kinds of activities which required Alcan's consent. The Industry Department did not have any direct veto power, except insofar as it could influence individual Board members, or if the project required a new concession agreement.

Conclusion

Although ASV started out as a 100% Government-owned enterprise, it has operated very much the way any other privately-owned aluminum company might operate. In order to gain flexibility in decision-making and the proper incentive for efficiency, the Government organized ASV as a commercial corporation subject to the same conditions as any private corporation. Although the plant locations at Ardal and Sunndalsøra had been chosen partly because of their favorable effect on underdeveloped regions, ASV has tried to operate on a profit satisficing basis. A policy of risk aversion was followed partly because of the need to guarantee stable employment at Ardal and Sunndal, but this turned out in retrospect to be a fairly profitable choice. The main risk aversion features were the long-term barter contracts for aluminum oxide and aluminum ingots. A non-risk-aversion policy might have been for ASV to develop its own bauxite or aluminum oxide sources, and on the other end, to produce semi-manufactures and finished products. It is not clear that the non-risk-aversion policy would have generated higher profits since ASV's profit record was exceptionally good compared to nearly all other large Norwegian corporations.

ASV's internal organization structure was very similar to that found in other Norwegian corporations with but one exception. ASV's Stockholders' Committee had significant representation by workers and municipalities.

ASV was audited by a private CPA firm in the same manner as any other Norwegian corporation.

Labor relations in ASV, it was found, had been much better than average. Factors influencing this happy state of affairs had been a perceived common interest by the workers and the Labor Party, a willingness to experiment with industrial democracy, and lack of alternative opportunities for most of the

workers. It will be interesting to see if labor relations continue to be peaceful now that the Labor Government is out of power, the Government no longer owns 100% of ASV, and good opportunities exist for the workers in other aluminum plants or industries.

In the opinion of the author, long range planning by ASV was more elaborate than in any other Norwegian corporation. A computerized simulation model, a miniature aluminum research library, and a five-man Planning Division staffed by men with advanced academic degrees represented considerably more resources devoted to long term planning than in most Norwegian firms. Three years of experience was too short a time period to determine if this long range planning effort would prove to be worth this resources commitment, but the early results seemed impressive.

Operating control was exercised through the normal budgets, delegated spending authority, position guidelines, and written instructions for routine jobs. The only unusual feature here was the high amounts of delegated spending authority. This situation was necessitated in the past by ASV's size and the geographic isolation of its plants, but was also a function of management and ownership philosophy.

CASE STUDY OF ALNOR ALUMINUM NORWAY A/S (ALNOR)

Historical Development

Alnor was founded May 5, 1963, as a joint venture between the Norwegian electrochemical concern Norsk Hydro-Elektrisk Kvaelstofaktieselskab (Norsk Hydro) and the American company, Harvey Aluminum, Incorporated. Norsk Hydro received 51 percent of the common stock and Harvey, 49 percent. The latter agreed to supply alumina on a long term contract with repayment made in aluminum ingots from Alnor. Norsk Hydro agreed to furnish the electric power from its half of the Røldal-Suldal Kraft A/S complex, as well as provide land at Karmøy, South West Norway. The initial planned capacity of Alnor was 77,000 tons of aluminum, with a later possible expansion to at least 110,000. In addition, semi-manufactures were to be produced from the start. In this connection, a cold rolling mill with an annual capacity of 24,000 tons, an extrusion operation with an annual capacity of 12,000 tons and a wire rod mill with an annual capacity of 9,000 tons were planned. There was also a chance that an alumina plant could be built, although this was not specified in the partnership.

According to the Norsk Hydro management, initiative for the joint venture came from Harvey Aluminum, which was at the time seeking a European site from which to conduct its overseas business. Harvey Aluminum reportedly had talked with several European producers before finally joining Norsk Hydro. As mentioned in the ASV case study, Norsk Hydro had been interested in branching into aluminum production. Discussions between Harvey Aluminum and Norsk Hydro were carried on during 1962 and culminated in the 1963 agreement.

According to the management of Harvey Aluminum, the U.S. firm had been interested in participating with the Norwegian Government in ASV some years before Alcan's association with ASV. Unfortunately, the government official with whom Harvey's representatives were working fell into a degree of disfavor within Norway, and the scheme was shelved. Subsequently, and upon the suggestion of the same Norwegian official, Harvey negotiated a partnership with Norsk Hydro, which is owned 48 percent by the Government, 20 percent by other Norwegian interests, 27 percent by French interests and the balance in widely distributed pieces. Hence, the Norwegian Government held effective control. A foothold in the metals industry (magnesium) and cheap power, a major factor in aluminum production, made Norsk Hydro an attractive partner for Harvey. According to Harvey management, Norsk Hydro wanted to expand its power generating facilities, and the presence of a large consumer, such as an aluminum reduction plant, would make this a much more economic proposition.

Negotiations began in the Fall of 1962, and an agreement was signed in May, 1963. This provided for a new company, Alnor Aluminum Norway A/S, to be formed, owned 51 percent by Norsk Hydro, and 49 percent by Harvey. Each partner put up about \$7.5 million, and the balance of \$77-78 million was to be borrowed, about \$40 million in the U.K., and the rest mainly in Scandinavia and the U.S.A. Each partner was to be represented equally on the board. Most technical knowhow and training, and especially managerial techniques and advice were to be provided without charge (except for the salaries of the personnel involved) by Harvey. The plant and equipment were very largely engineered by Harvey, who had previous experience in this field. Norsk Hydro supplied engineering and knowhow in special fields.

Harvey's perception of the management abilities of most Norwegian executives was that they were not as aggressive as, and lacked the modern techniques of, their American counterparts. The transfer of management skills to the new company was seen by the Americans as considerably more important than any new engineering technology which Harvey might be able to provide. Indeed, this consideration had been a major factor encouraging Harvey to take an interest in the Norwegian aluminum industry. Harvey did not believe that the Norwegian Government was capable of, or even wanted to, run the industry itself. For this reason Harvey saw the eventual arrangement worked out between ASV and Alcan as less advantageous to the Norwegians than if Harvey had participated. The Kingdom of Norway had accepted payment for half of ASV very largely in the form of Alcan shares, the sale of which was restricted by the agreement. The Norwegian Government was therefore still locked into the aluminum industry. Allegedly, Harvey's proposal would have involved no share transfer, thereby freeing a large amount of cash and enabling the Government to participate in other enterprises. Another aspect of cooperation with a company already heavily involved in the international aluminum industry, such as Alcan, was that Alcan had a very large degree of control over the potential markets, so that should it, for instance, appear profitable for the company as a whole to shift fabricating capacity from Norway to England, this might be done by market pressures, against the interest of the Norwegian partner. On the other hand, Harvey had virtually no international interests, except the Norsk Hydro partnership and membership in a bauxite mining consortium in the Republic of

Guinea in which the Government of Guinea participated.

Construction of the Alnor facilities began in 1964 and production of ingots, in 1967. By the end of 1968 the rolling mill and extrusion presses were to be under full operation. Total employment would run about 900 persons.

The total cost of Alnor was roughly kr. 660 million (\$92.4 million), financed as follows:

- | | |
|---|------------------------|
| 1. Construction loans from British and U.S. banks to be converted to Norwegian bonds during the period 1967-1970. | kr. 143 million |
| 2. Suppliers' credit in Scandinavia and UK, most of which was an export credit tied to British equipment exports. | kr. 367 million |
| 3. Other credit, largely short term working capital obtained in Norway and abroad. | kr. 43 million |
| 4. Common stock, paid in cash | <u>kr. 107 million</u> |
| TOTAL COST OF ALNOR | kr. 660 million |

The plant location at Havik on Karmøy was chosen with great care in order to minimize the environmental problems that bother other aluminum plants in Norway and elsewhere in the world. The plant was located in an area with an existing population base of some 60,000 mainly on the island of Karmøy and in the neighbor town of Haugesund, a marketing, cultural, and communications center for this part of southwest Norway. The larger city of Stavanger was also within easy reach by boat and was an international sea and air link for Norway. By locating on Karmøy, in an area with substantial local unemployment due to the weakness of its fishing and agricultural industries, Alnor was able to recruit nearly all of the necessary personnel locally. It also escaped the necessity of creating an isolated company town, such as Ardal, thereby avoiding the added

cost of building a complete package of social overhead facilities. Proximity to Haugesund and Stavanger likewise helped in the recruiting of top management personnel who otherwise would have been loath to live in isolated splendor in "the sticks."

The physical location of Karmøy was also favorable for the technical operation of an aluminum plant. Excellent deep water ocean facilities were available. Regular communications and transportation through Haugesund and Stavanger were adequate. There was more than enough land adjoining the plant site for expansion, and this land was owned by Norsk Hydro. The same was true of additional power capacity. Wind conditions were such that a large part of the fluoride gas was blown to sea rather than over the neighboring landscape.

There were two major disadvantages to the plant location. By recruiting 95 percent of the personnel locally from a non-industrial society, rather than importing skilled aluminum workers, Alnor was obligated to supply considerable education and training to nearly all of its employees. Most of this training was accomplished by sending about 75 key people to Harvey Aluminum in the United States. These men were then used to train the others upon their return. The physical location of the plant required that electric power be transmitted over a relatively long distance. Although this increased the initial investment, it was not as serious a problem as it had been early in the century when Ardal and Sunndal were built. New technology had made power transmission over long distances safer and less costly.

Although Alnor was ostensibly a joint venture between two private corporations, Norsk Hydro was itself a joint venture between the Norwegian Government (48 percent), and private investors (52 percent), mainly Norwegian and French. It had been founded in 1905 by Sam Eyde, the Norwegian industrial pioneer who had

also founded Elektrokemisk A/S. One of Eyde's objectives had been the utilization of an electrical process (Birkeland-Eyde) for turning atmospheric nitrogen into artificial fertilizers. The Swedish Wallenberg Group financed part of the original capital stock and convinced Banque de Paris et des Pays-Bas to take another share. Norsk Hydro grew steadily under Norwegian management (but foreign ownership). In 1927 the German I. G. Farben Group received 25 percent of Norsk Hydro's common stock in exchange for the rights to the Haber-Bosch ammonia process. During World War II the Germans unilaterally expanded their ownership share. After the War, the Norwegian Government took over the German share of Norsk Hydro, which by that time was 43 percent of the total. Thus, through war reparations, the Norwegian Government became a joint venture partner with the private investors.

After World War II, Norsk Hydro continued to grow. In addition to expanding production of nitrogen-based fertilizers it branched into production of magnesium and PVC (raw material for plastic). As of 1966 Norsk Hydro was Norway's second largest industrial corporation measured by sales and employment. It also ranked first in exports and third in net profits. Exhibit 13 presents some relevant economic data on the enterprise. Even though Norsk Hydro was large by Norwegian standards, it was still slightly smaller than Harvey Aluminum.

Organization Structure

The organizational structure of Alnor was relatively simple, reflecting the fact that the principal task so far had been construction and start-up of operations. There was also only the one plant with headquarters right

Exhibit 13

ECONOMIC DATA ON NORSK HYDRO

BASED ON FISCAL YEAR 1965-1966 (JULY)

		Rank Among All Norwegian Industrial Corporations	
<u>Item</u>	<u>Amount</u>		
1. Sales	kr.916 million* (\$128 million)	2	
2. Export	kr.659 million (\$92.3 million)	1	
3. Net profit	kr. 56 million (\$9.8 million)	3	
4. Capital stock	kr.320 million (\$44.8 million)	2	
5. Assets	kr.1,404 million (\$196.6 million)	1	
6. Employment	9,680	2	

Source: A/S Økonomisk Literatur, Norges 500 Største Bedrifter,
A/S Økonomisk Literatur, Oslo, 1967.

Norsk Hydro Annual Report 1966-67, (Oslo: Norsk Hydro, 1967)

* 7.14 krone equal \$1.00.

at the plant site rather than in Oslo. Exhibit 14 charts Alnor's organization.

The Board of Directors consisted of eight men, four of whom were elected by Norsk Hydro and four, by Harvey Aluminum. The Chairman of the Board was first Rolf Østbye, then President of Norsk Hydro, later Johan Holte (Østbye's successor). One of the Harvey-selected board members was a Norwegian citizen in accordance with Norwegian concession legislation requiring a majority of Board members to be Norwegian. The other Harvey members were top Harvey operating officials including Homer M. Harvey, one of the owners and Executive Vice President of Harvey Aluminum. The Norsk Hydro-appointed board members were also "inside men" in the sense of being top officials in Norsk Hydro.

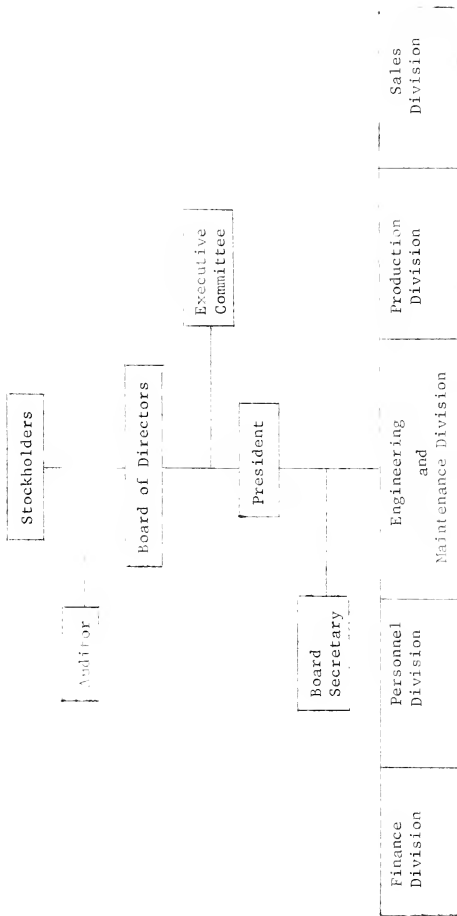
Alnor was not consolidated financially or organizationally with either Norsk Hydro or Harvey Aluminum. (In Norway two-thirds ownership is usually required for consolidation.)

Although Alnor's Board of Directors was fairly active, meeting about once a quarter, the distance to Torrance, California (Harvey Aluminum headquarters) was an obstacle for quick decision-making. To circumvent this problem, Alnor's Executive Committee (Exhibit 14) was permitted to make some of the decisions that would normally have been made by the full Board of Directors. This Executive Committee was composed of two Harvey Aluminum members (including Homer Harvey, Executive Vice President), two Norsk Hydro members, and the Alnor President (Lorentz A. Conradi). The Harvey Aluminum and Norsk Hydro members were also either members or alternates on the Alnor Board of Directors.

Additional decision-making flexibility was achieved during the construction period in that one high-ranking Harvey Aluminum officer was stationed in London to keep an eye on the British suppliers of equipment for Alnor. He was assisted

Exhibit 14

ORGANIZATION CHART FOR ALNOR



by the Wellman Engineering Corporation, which was the British agent for Alnor and watchdog over the British export credit guarantees. Harvey Aluminum engineered most of the Alnor plant and, therefore, was best qualified to supervise the construction and supply stage.

In 1967, the Board of Directors elected a Norwegian citizen as President of Alnor. So far, he had not been delegated as much spending authority as the President of ASV, being limited to kr. 100,000 (\$14,000) on individual items. This might change once the construction phase was completed and operations became the main decision-making problem. The President and all key management personnel were located at the plant site on Karmøy.

Exhibit 14 shows that the functional divisions were fairly standard, there being no apparent complicated interrelationships. Alnor was considerably smaller than ASV, and thus, in some respects, its organization structure resembled ASV's of many years ago when all had been concentrated at Ardal.

Sales of Alnor's output, exclusive of the barter metal, were under exclusive Alnor control through its Sales Manager, Kurt M. Carlsen, who was stationed at Karmøy. Alnor acted as Harvey Aluminum's European sales agent, and Harvey as Alnor's North American sales agent. This relationship was an advantage for Alnor because it opened up the entire world as a potential export market without the danger of conflicting with prior Harvey Aluminum interests. This situation was in direct contrast with ASV which had to consider whether it was exporting to customers of other Alcan plants. In fact, Alnor's sales and product policy had been to produce and export as much fabricated products as possible, something which ASV had hesitated to do previously because of its apparent lack of profitability. ASV continued to avoid such an expansionist policy because of conflict with Alcan's other fabrication facilities.

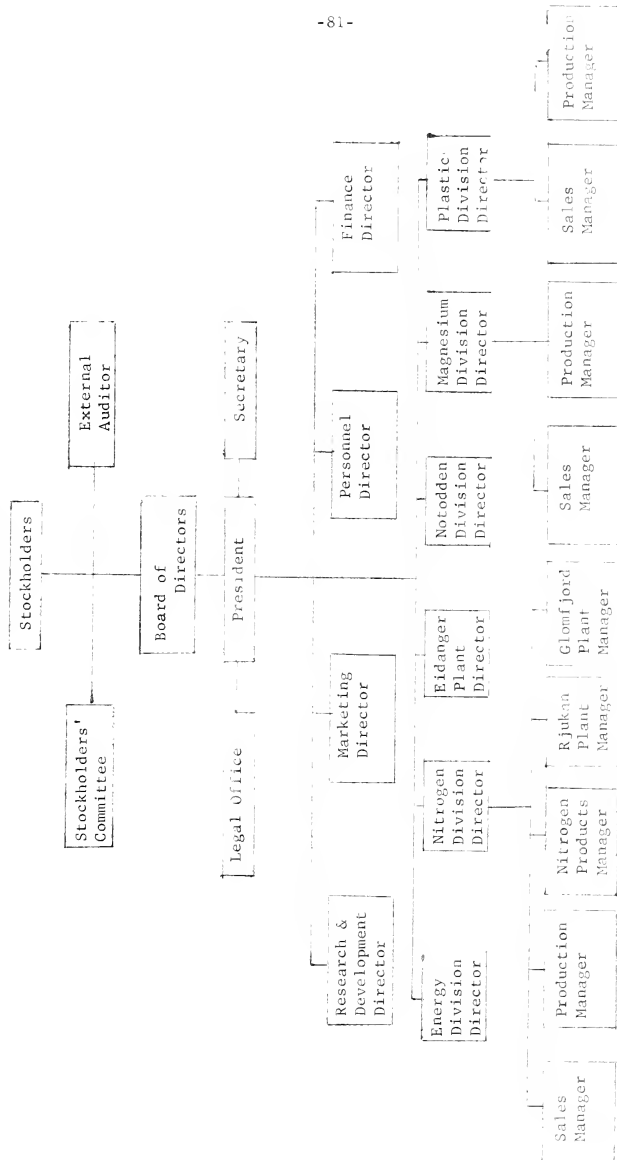
It might be noted that there was no research and development division in Alnor, a situation roughly parallel to that of Harvey Aluminum itself, where much of the research and development had gone into sales research rather than production methods' improvement or new product development. Size had a great deal to do with this choice. On the other hand, Norsk Hydro was spending comparatively large amounts on basic research.

Norsk Hydro had a relatively complicated organization structure compared to either Alnor or Harvey Aluminum. Exhibit 15 lays out the 1968 organization chart for Norsk Hydro. Its internal organization appeared to be a hybrid between product divisions and production activities. The planning research, sales and finance functions were all centralized at the head office in Oslo. The production decisions were largely under local control.

Norsk Hydro's seven-man Board of Directors, in contrast to Alnor, was composed mostly of "outside members." Banque de Paris et des Pays Bas had elected three and the Industry Department two (including the former President of the National Association of Unions). The President of Norsk Hydro, Johan E. Holte, and the ex-President of Norsk Hydro, Rolf Østbye, were the last board members, the latter being Chairman of the Board.

As mentioned previously, the Norwegian Government's Industry Department policy was not to interfere in the operation of private industrial corporations in which it held stock. This was doubly true of Norsk Hydro, which had a large share of private ownership and had always been profitable. Field interviews also led to the impression that Norsk Hydro's management considered itself to be an independent private corporation that happened to have a large State ownership. This was considered an advantage from a stability point of view in that there

NORSK HYDRO ORGANIZATION CHART ON JANUARY 5, 1968



was little perceived danger of a stockholder sell out. Also, there were for all practical purposes only two bosses to satisfy rather than a host of diverse interests. Internal financial profit seemed to be the prime goal, with only secondary consideration given to national goals. It would seem that the main reason the Government retained its stock in Norsk Hydro was to ensure that it remained Norwegian-controlled.

Auditing

There was only one auditor for Alnor, a private Norwegian accountant who also audited Norsk Hydro. Harvey Aluminum had not asked for its own audit. There had been frequent visits and extended assignments of Harvey Aluminum personnel to Alnor in order to start up operations, since most of the technology was coming from Harvey Aluminum. These visits perhaps gave Harvey Aluminum a sort of unofficial audit.

Labor Relations

Alnor started out as an experiment in industrial democracy. All employees, whether staff or production workers, had individual contracts and worked a 42.5-hour week. As of 1968 everybody was on a fixed salary independent of productivity. But of course at least one reason for this situation was that there was no statistical basis on which to measure productivity. The best available comparison was with Harvey Aluminum's own plant at The Dalles, Oregon. According to one Harvey Aluminum engineer, the Norwegians had learned exceptionally quickly and would very soon be on the same productivity level as the American plant.

Reaction to the experiment on contracts and equal work hours was favorable. There was no union at Alnor, although the LO tried to get an organization started. Alnor did not belong to NAF. The office workers were

satisfied even though equalizing hours meant an increase of 2.5 hours per week for them. They had been compensated by higher salaries than comparable positions in Haugesund or the surrounding area.

There existed a committee called Alnorutvalget representing the employees and taking the place of a union. Membership was by annual election. Its structure consisted of a central committee and five subcommittees elected by the various plant and office departments. Nominations were made by the workers in each department and elections held to select members for the subcommittees. The winner of each of these elections automatically became a member of the central committee, with the largest department sending two representatives. Alnor management chose six members of the central committee, which had a total of twelve members. The chairman of Alnorutvalget was elected for one year, first by the workers and then by Alnor management. The function of Alnorutvalget was to hear complaints and to discuss salary matters. Participation in the elections, according to several of the persons interviewed, was much heavier than would have been the case of a union election. In contrast to ASV, there were no employees represented on Alnor's Board of Directors or Stockholders' Committee.

The Alnor Personnel Manager had complete freedom to operate independently of Norsk Hydro or Harvey Aluminum. Both of these owners had had their experts at Karmøy to help get production started but they had not interfered in personnel matters. In fact, Norsk Hydro was a member of NAF, its employees belonging to the Norwegian Chemical Workers Union.

Planning and Control

Alnor's planning and control system was much less complicated than the one at ASV. Most of the original long term planning was done by Harvey Aluminum and Norsk Hydro.

Capital budgeting was used at the Alnor plant level. Internal rate of return on investment (discounted cash flow) was the method employed for larger projects and payback for smaller ones. Requests originated in the operating departments and flowed through the Finance Division. As yet there was no formalized procedure for processing the requests.

Operating control was maintained through monthly, quarterly and annual budgets. These included requests for operating and capital items, as well as cash flow forecasts. The annual budget was submitted to the last Board of Directors meeting of the year after being reviewed by the Alnor President and staff. There was also a five-year budget, but this was submitted periodically rather than on any fixed time schedule.

Conclusion

It is still too early to judge the success or failure of Alnor as a joint venture. It should not really be considered a joint venture with the Norwegian Government as a partner, because the Government control of Norsk Hydro is weak and is further diluted by the independent status of Alnor.

In some respects Alnor resembles Harvey Aluminum more than it resembles Norsk Hydro. Both Alnor and Harvey Aluminum seem to be quite sales-oriented. Neither devotes substantial resources to basic research, nor do they have sophisticated planning and control systems. On the other hand, Norsk Hydro is basically

production-oriented and does devote resources to basic research and long range planning. In fact, there is more similarity between Norsk Hydro and ASV or Alcan than with Harvey Aluminum.

FOOTNOTES

1. Arthur Stonehill, Foreign Ownership in Norwegian Enterprises (Oslo: Central Bureau of Statistics, 1965), pp. 28-30.
2. This section quoted or paraphrased from Stonehill, op.cit., pp. 46-48 and St. Meld. nr.21 (1963-64): Om Utenlandske eierinteresser i norsk industri (Oslo: Industridepartementet, November 29, 1963). Although the Act of June 19, 1969 amended parts of the Act of December 14, 1917, the cases described here were subject to the Concession legislation in existence prior to 1969.
3. The Royal Decree of December 3, 1924 permitted rental of real estate without a concession agreement for a period not to exceed 10 years, but this provision did not apply to industrial enterprises. A lessee could not make a 10-year contract which contained a provision to renew.
4. Fully Norwegian-owned corporations were also subject to the Act of 1917 in connection with the development of waterfalls and mines.
5. Stonehill, op.cit., pp. 46-48.
6. Ibid, pp. 56-57.
7. Trygve Lie led the commission and its administrative organ, Kontor for industrifinansiering, until 1963, when direction was transferred to Erik Brofoss, Director of Norges Bank. Since 1966 the commission has been defunct.
8. St. Meld nr. 60 (1960-61); Langtidsprogrammet 1962-1965 (Oslo: Finans-og Tolldepartementet, April 7, 1961), p. 48.
9. St. Meld nr. 6 (1962-63); Om Utbygging av Vannkraft og Kraftkrevende industri (Oslo: Industridepartementet, 1962), Chapter VI.
10. St. Meld nr. 21, op.cit., pp. 18-19. For the reaction of members of Parliament to this white paper see Forhandlinger i Stortinget nr. 17-20 (Oslo: Stortinget, October 14-15, 1964).
11. Industristatistikk 1966 (Oslo: Central Bureau of Statistics, 1968), p. 14.
12. Stonehill, op.cit.
13. Industristatistikk 1966, op.cit., p. 14.
14. For a more complete description of individual Government holdings, see St. Meld. nr.12 (1959): Om Bedrifter hvor staten v/Industridepartementet har interesser som eier, aksjonær eller andelshaver (Oslo: Industridepartementet, January 16, 1959).
15. For the details of how the Law of June 25, 1965, was formulated and passed by Parliament, see Ot. prp. nr.22 (1963-64): Om lov om visse statsbedrifter m.m (Oslo: Justis-og politidepartementet, January 6, 1965); Inst. O.XXIII

(1964-65): Innstilling fra utenriks- og konstitusjonskomiteen om lov om visse statsbedrifter m.m. (Oslo: Utenriks- og konstitusjonskomiteen June 2, 1965); and Fornandlinger i Oldelstinget nr.103-106 (Oslo: Stortinget, June 15, 1965).

16. For good summaries and interpretations of the Law of June 25, 1965, see Arne Christianson, "Ny Norsk Lovgivning Om Organisasjonsformene For Statens Forretningsforetak", in Nordisk Administrativt Tidsskrift (Oslo: 1965). pp. 306-322, and E. E. Eckhoff, "Den nye lovgivning om statsbedrifter", in Norsk Juridisk Tidsskrift, (Oslo: Universitetsforlaget, 1966), pp. 454-461.
17. For the proposed reorganization plan, see St. prp. nr.133 (1967-68): Omorganisering og refinansiering av Kongsberg Vapenfabrikk, Raufoss Ammunisjonsfabrikker og Marinens Hovedverft (Oslo: Industridepartementet, May 24, 1968).
18. Among the more sensational controversies in recent years have been the Lindstrøm case (corruption within the Industry Department), Kings Bay Case (an explosion in a Government-owned coal mine on Svalbard with heavy casualties), the Husnes case (controversy over terms of establishment of A/S Sør-Norge Aluminium), and A/S Norsk Jernverk -- Norsk Koksverk A/S (miscalculated investment and profitability forecasts and financial losses in the Government-owned iron, steel and coke complex).
19. For the proposed reorganization of the Industry Department, see St. Meld. nr.36 (1964-65): Om administrasjonsordningen og Forvaltningen i Industri-departementet (Oslo: Statsministeren, January 28, 1965).
20. For the Parliamentary debate, see Innstilling fra Statsselskapskomiteen av 1956 (Eckhoff Komiteen), (Mariendals Boxtrykkeri A/S Gjøvik, April 8, 1960).
21. Verksposten 1 (Oslo, A/S Ardal og Sunndal Verk, 1968), p. 30 and Dag Tresselt, "Norsk Aluminium Gjennom ar", in Bedriftsøkonomen 3 (Oslo, March, 1968), p. 107.
22. Verksposten I, op.cit., p. 108.
23. Egil Kollenberg, Det Norske Nitridaktieselskap, 1912-1962 (Oslo: Det Norske Nitridaktieselskap, 1962).
24. Kare Fasting, Norsk Aluminium gjennom 50 ar (Oslo: Norsk Aluminium Company, 1965).
25. Dag Tresselt, op.cit., pp. 111-114.
26. Ibid, page 114.
27. In 1928 Alcan was separated from Alcoa due to antitrust action. Alcan took over the NACO and Nordisk shares. The Norwegian-owned 50% share of NACO and Nordisk were organized into a holding company, A/S Høyanger (originally called De Norske NACO-Aktier A/S), which voted the shares

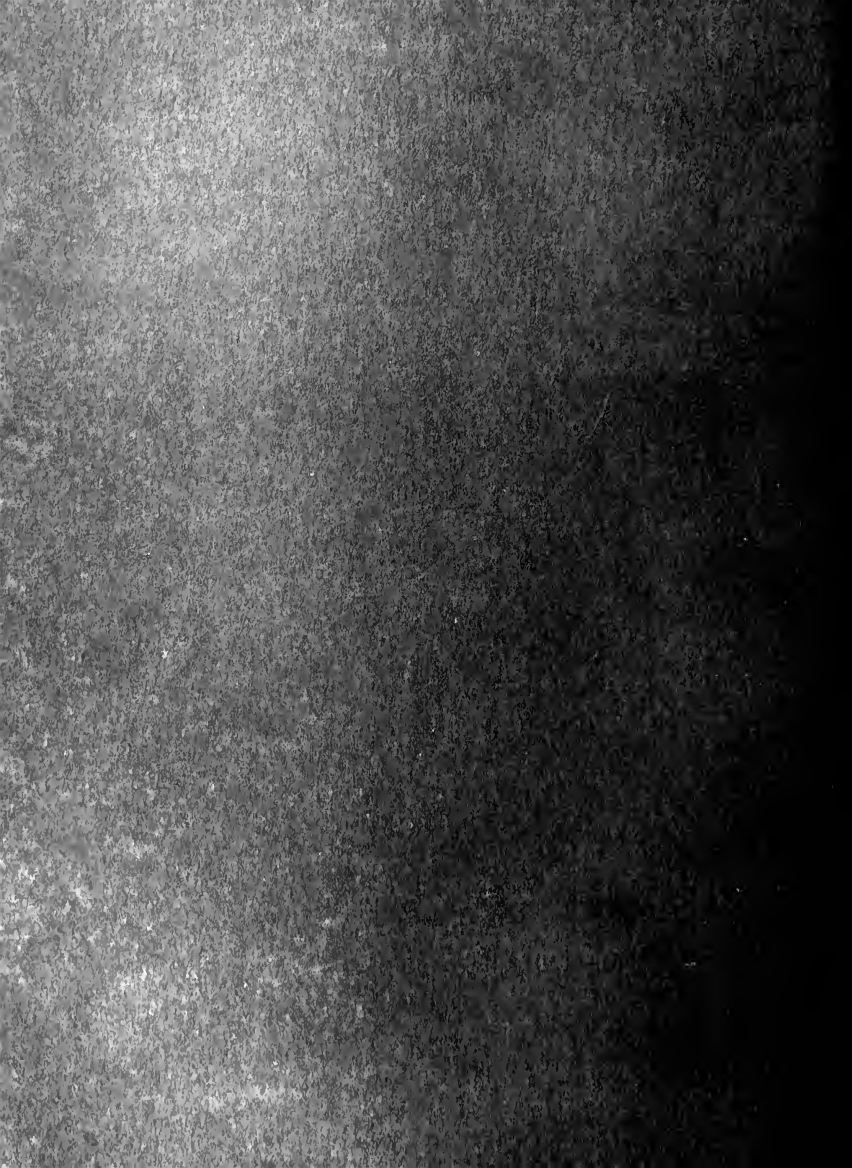
as one. Nevertheless, Alcan elected a majority of the members of the Board of Directors and thereby maintained operating control.

28. Arne Halvorsen, "Alvorlig anslag mot aluminiumindustri", in Norges Industri (Oslo, December 1968), pp. 320-323.
29. The net impact on the balance of payments is impossible to measure without taking into account the considerable amount of induced imports and alternative uses of the factors of production used by the aluminum industry.
30. Aage Owe, "En Industribedrift Blir Til", Kristofer Lehmkuhl, Lecture, Norges Handelshøyskole, Bergen, June 15, 1966, p. 3.
31. Although A/S Nordag was valued at kr. 100 million, only kr. 60 million was connected with the Ardal Project.
32. Aage Owe, op.cit., p. 5.
33. The metal repayments were actually made in six years.
34. Dag Tresselt, "Norsk Aluminium Gjennom 60 år," in Bedriftsøkonomen 5, (Oslo, May 1963), pp. 249-251.
35. A/S Norsk Aluminium's Høyanger plant is the only one in the world using the Pedersen process. It is a relatively small operation.
36. Norwegian membership in EFTA has reduced the tariff barriers to zero in these markets, a fact which has improved the prospects for future export of semi-manufactures.
37. Dag Tresselt in Bedriftsøkonomen 5 and 6, op.cit.
38. Aage Owe, op.cit., p. 9.
39. Ibid, 7, and Establishing a Business in Norway (Washington: U.S. Department of Commerce, May 1962).
40. Parliamentary Debate, Forhandlinger i Stortinget nr. 213-219, (Oslo, December 13, 1966.)
41. Jean Michelet, "Hva Skjer I Aluminiumindustrien?" Speech to Statsøkonomisk Forening, February 27, 1967, p. 9: Ot. prp. nr. 22, op.cit., p. 9; and Verksposten I, op.cit., p. 146.
42. Jean Michelet, op.cit., pp. 3-4.
43. Ibid, pp. 9-12, and Ot. prp.nr.22, op.cit., pp. 10-11.
44. S. Walter Rostoft, St. meld.nr.23 (1966-67), (Oslo: Industridepartementet November 4, 1966), pp. 1-3.

45. Ibid.
46. For paraphrase of the agreement, see S. Walter Rostoft, St. prp. nr.45 (1966-67), (Oslo: Industridepartementet, December 2, 1966), pp.13-14.
47. This has been interpreted to mean long term assets.
48. As mentioned earlier, NACO (an aluminum producer at Høyanger, Norway) and Nordisk (an aluminum fabricator at Holmestrand, Norway) were owned 50% by Alcan and 50% by A/S Høyanger (a Norwegian holding company owned by Norwegian citizens).
49. Innst. S. nr.85 (1966-67) (Oslo: Forsterkede Skogvassdrags-og industri-komite, Stortinget, December 9, 1966), pp.145-148; Rostoft, St. prp.nr.45, op.cit., pp.15-19; and Michelet, op.cit., pp.10-11.
50. At the time of the agreement Alcan shares were selling for \$36.60. It is interesting to note that just prior to Parliamentary approval the price had dropped to \$25. This was brought out in the Parliamentary debate but given little weight because it was pointed out that income ability was not necessarily reflected in market prices of shares (Innst.S.nr.85,op.cit., p.1746).
51. Alcan interview material, November 13, 1967.
52. Ibid.
53. Innst.S.nr.85, op.cit.
54. Tresselt, "Norsk Aluminium Gjennom 60 år", op.cit.
55. Michelet, op.cit., and interview with Jean Michelet, President of ASV, Oslo, July 25, 1968.
56. Sverre Nafstad, "Med ASV I Vekst Og Stigende Konkurrans", speech to the Norwegian Students' Association in Zurich and St. Gallen, May 1968; and interview with Ragnar Nøkleby, Head of New Plant Construction, Ardal, August 6-7, 1968.
57. Det Norske Zinkkompani A/S is a 100% Belgian-owned company located near Odda (Eitheim), Norway. It produces zinc for export.
58. Nafstad, op.cit., pp.1-2.
59. Alcan interview material, November 13, 1967.
60. See Compass (Montreal: Alcan, December 1967) p.4, for the latest Alcan organization chart.
61. Interview, Jean Michelet, President of ASV, Oslo, July 25, 1968.
62. Interviews with Jørgen Torkildsen (plant manager, Ardal Verk, Ardal,

August 6-7, 1968), Kjell Nielsen (Vice President, Production and Engineering, ASV, Ardal, August 6-7, 1968), Ragnar Nøkleby (Head, New Plant Construction, Ardal, August 6-7, 1968), and Lund-Johansen (Office Manager, Ardal Verk, Ardal, August 6-7, 1968).

63. The source of most of this section is Michelet, "Hva Skjer I Aluminium-industrien?", op.cit.
64. Norsk Hydro and the Norwegian Government are 50-50 partners in Røldal-Suldal Kraft A/S. It has a total capacity of 2.14 billion kwh annual output and cost roughly kr. 370 million to build (\$52 million).
65. Interview, David S. Crystal, Senior Assistant Treasurer, Harvey Aluminum March 22, 1968.
66. Ibid.
67. Ibid.
68. Aftenposten, Oslo, July 1, 1968, p. 18.
69. Interview with Lorentz A. Conradi, President of Alnor, Oslo, July 29, 1968.
70. Most of this section is from Morgenbladet (Oslo, June 17, 1968, pp. 7-12), interview with I. Blikra (Chairman, Employees' Representative Committee of Alnor, Karmøy, August 12, 1968), and interview with A. Hoff-Eriksen (Personnel Manager of Alnor, Karmøy, August 12, 1968).
71. Most of this section is derived from an interview with O.C. Neverdal, Financial Manager of Alnor, Karmøy, August 12, 1968.



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